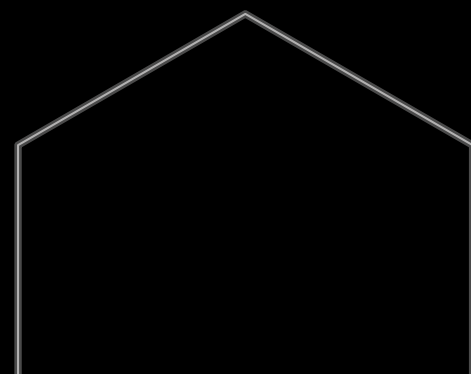
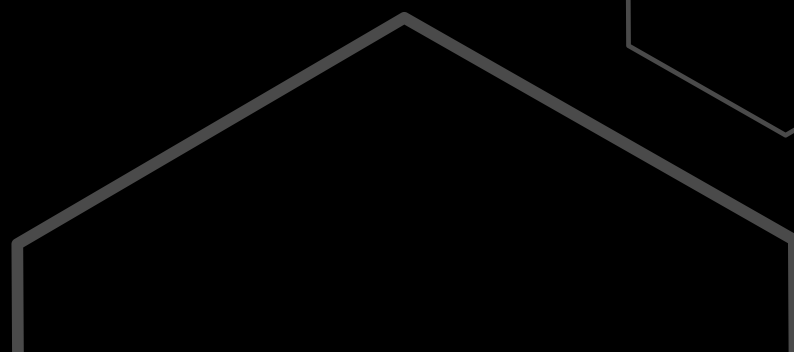
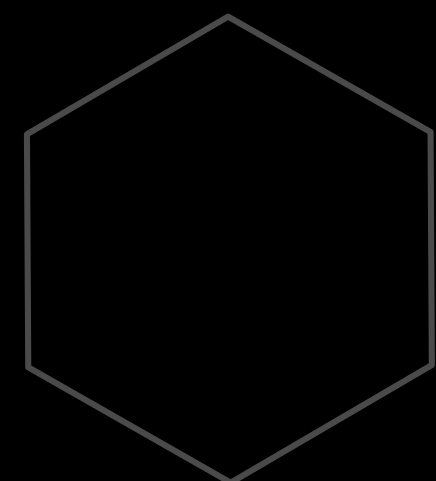
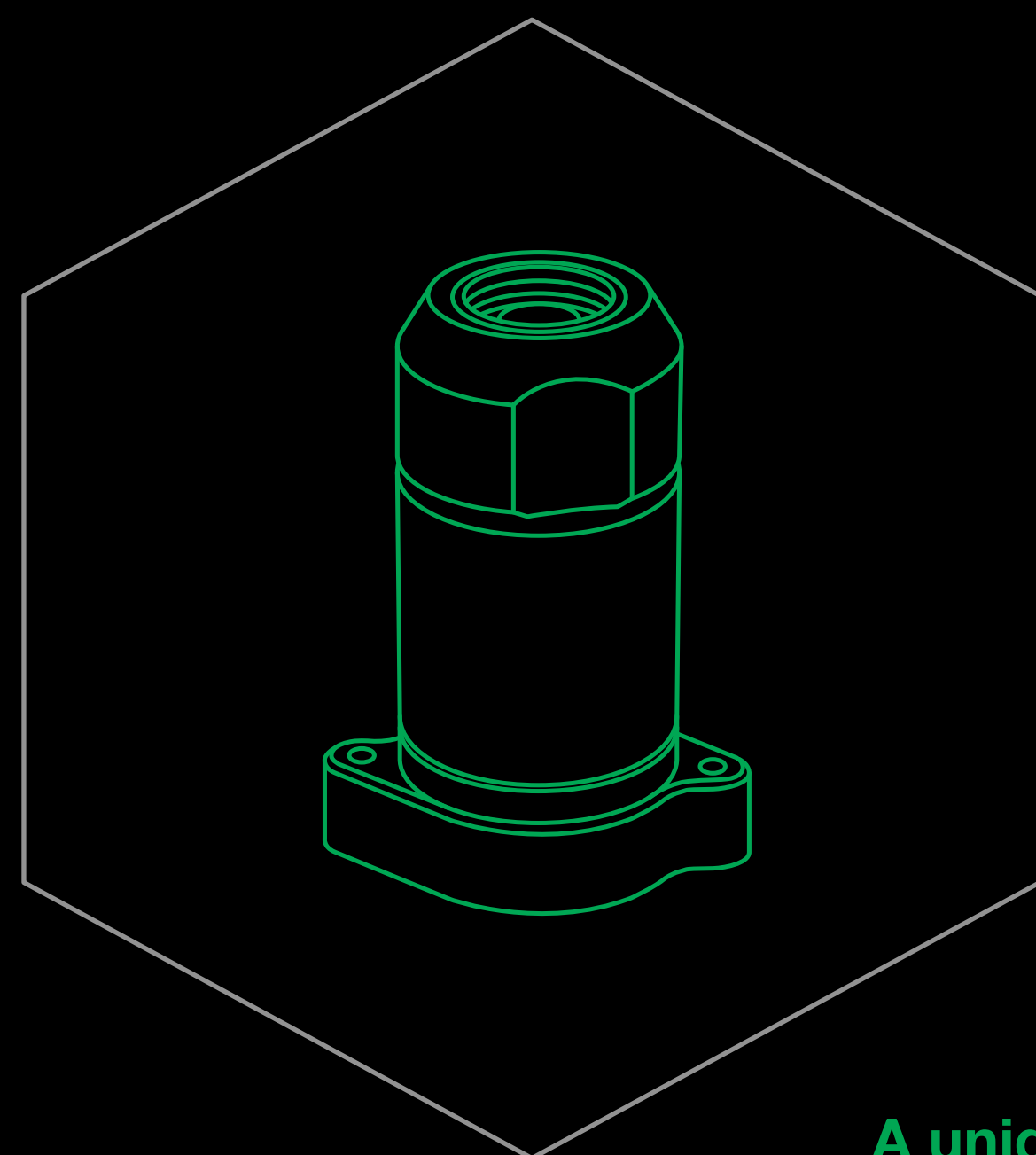


THE
SECRET
UNIVERSE



OVER VIEW



**CHROMA
TOGRAPHY**

DIRECT

IMAGING

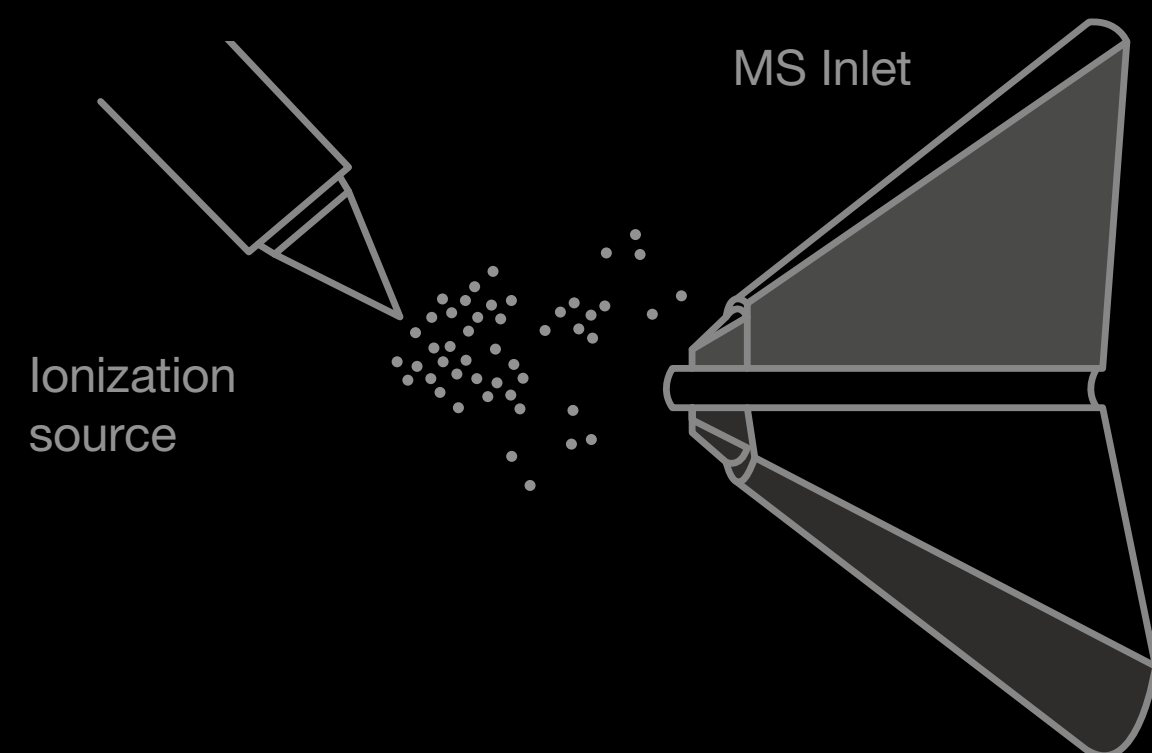
A unique and universal Ion Source that revolutionizes mass spectrometry across applications.

SICRIT® – **S**oft Ionization by **C**hemical Reaction **I**n Transfer – is an ambient, flow-through ionization technique for mass spectrometers with atmospheric pressure inlet (LC-MS).

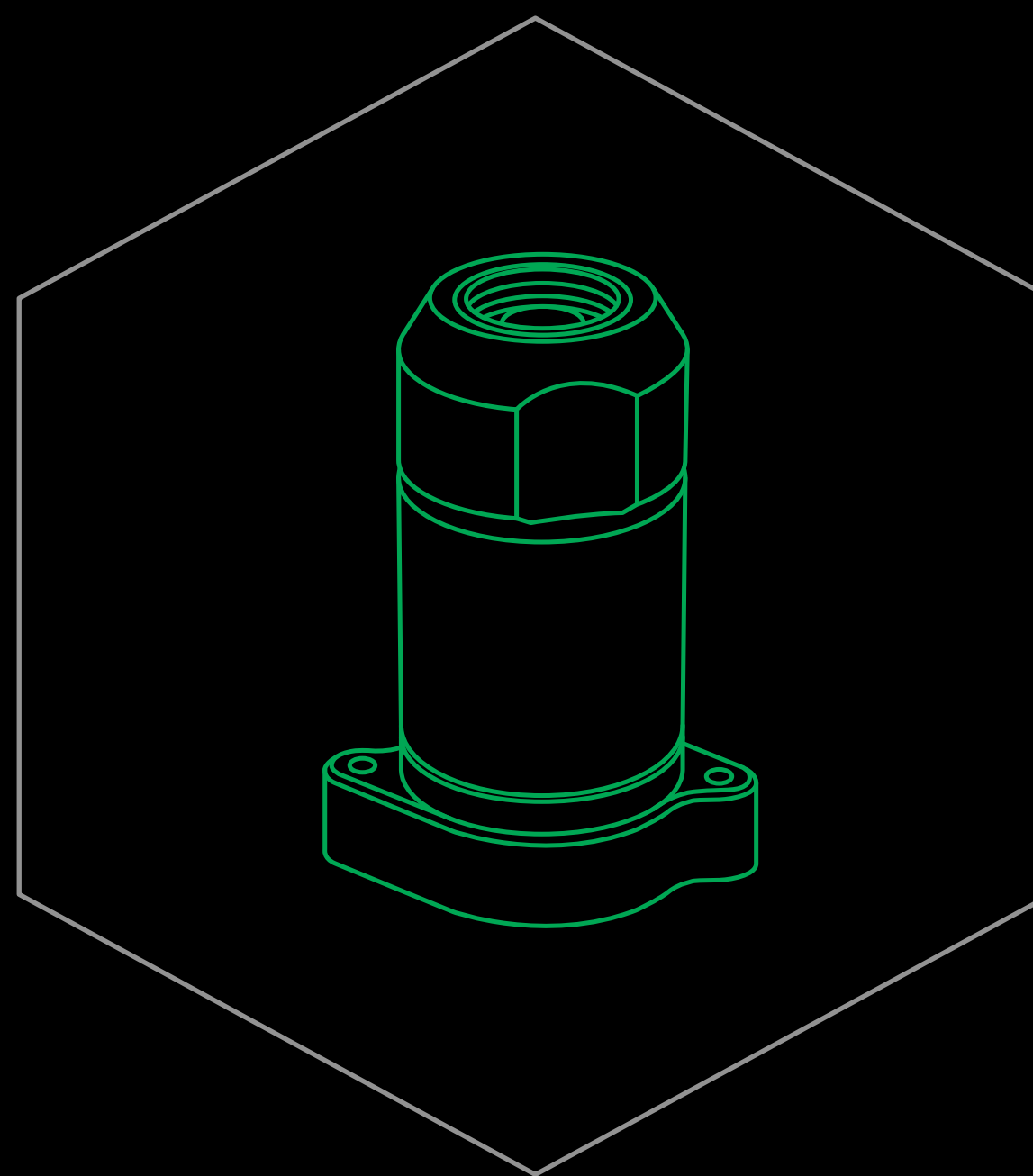
ION SOURCE TECHNOLOGY



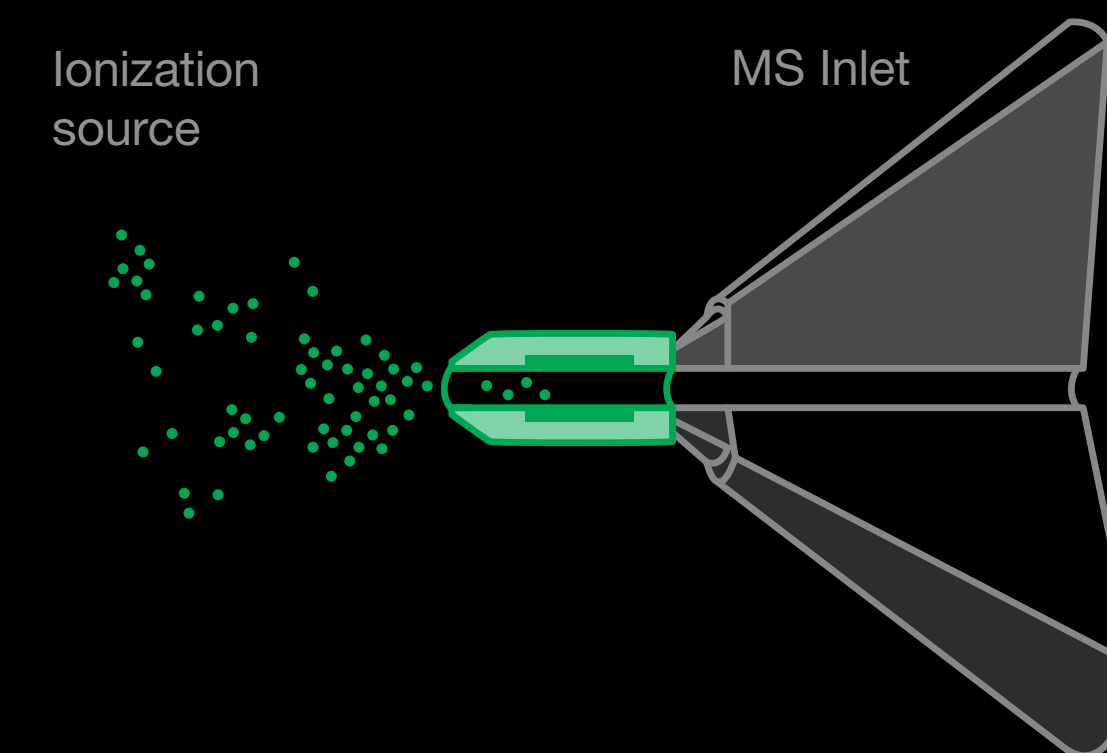
Conventional ionization



It is fundamentally different to conventional ionization methods: In almost all conventional ionization methods like ESI, DART, DESI or APCI, the analyte gets ionized before being introduced into the MS.



SICRIT[®] ionization



The patented SICRIT[®] Ion Source extends the inlet of the MS and ionizes all molecules that are drawn into the system due to the prevailing vacuum by means of a specially shaped cold plasma.

The plasma is generated by a special form of dielectric barrier discharge (DBDI) and takes place inside the extended inlet capillary.

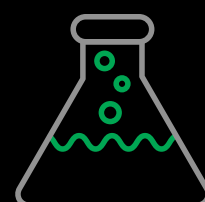
ION SOURCE ADVANTAGES



Sicrit
technology

Increased sensitivity

The ionization within a closed chamber in extension of the inlet prevents columbic repulsion before the inlet and enables higher sensitivities.



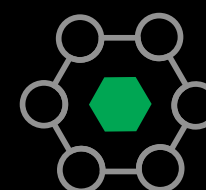
Enhanced range of analytes

Three simultaneous ionization mechanisms expand the range of detectable analytes, covering polar and non-polar components.



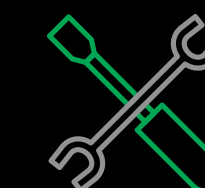
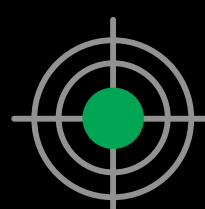
No fragmentation

The unique shape of the cold plasma enables a soft ionization of analytes and avoids fragmentation.



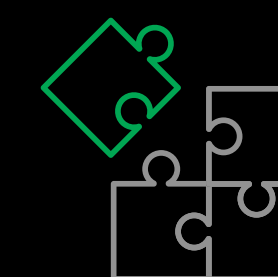
One for all

The SICRIT® Ion Source is available for all current LC-MS systems of all vendors.



No sample preparation

The ambient character of the ionization source allows to analyze solid, liquid, or gaseous samples in room air without sample preparation (direct screening).



Flexible coupling

SICRIT® is the only technique that provides a seamless coupling with all chromatography methods like GC, LC and SFC.



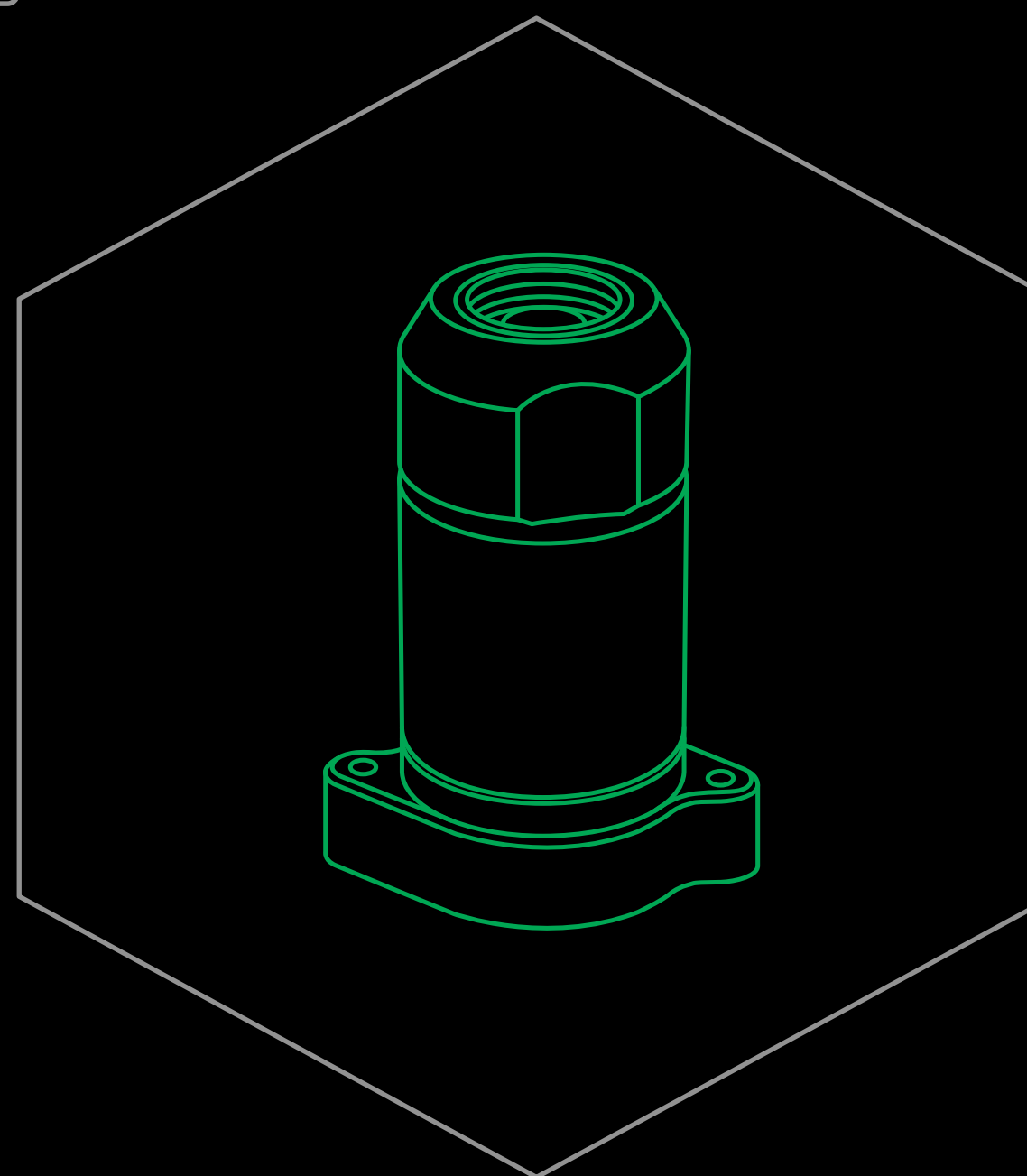
Low operation costs

SICRIT® does not require Helium or other noble gases for operation, it runs with ambient air and electrical power.



Easy installation & operation

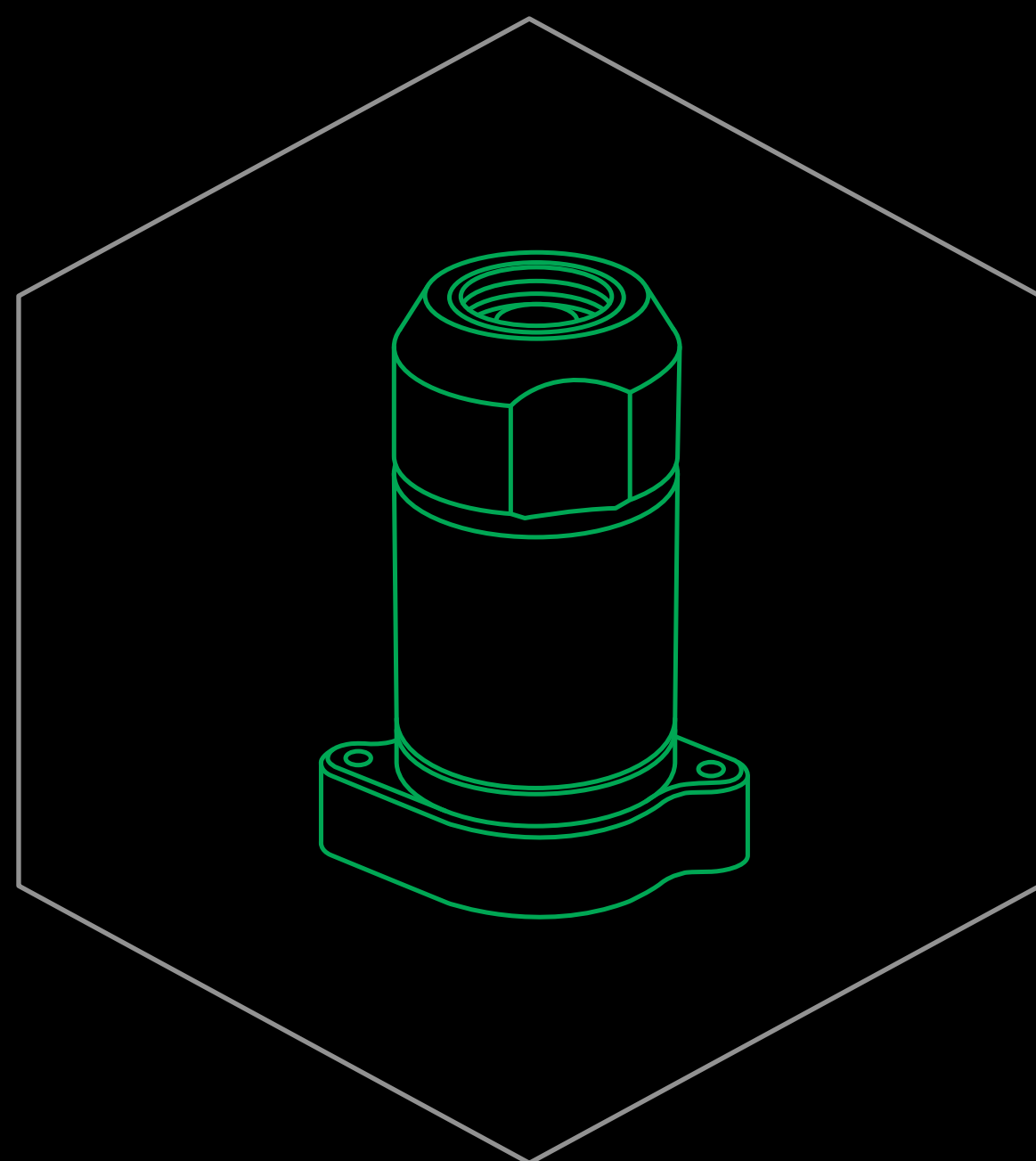
Plug & play ion source that does neither require calibration nor adaptations on hardware, software, or workflow.



APPLI CATIONS



Sicrit
technology



CHROMA TOGRAPHY

GC-(LC-)MS & LC-MS analysis

The SICRIT® Ion Source enables the coupling of any (LC-)MS with any kind of chromatography like GC, LC or SFC, without being limited to a specific combination of vendors.

DIRECT

Direct MS analysis

The SICRIT® Ion Source enables direct MS-analysis of solid, liquid or gaseous samples in a quantitative manner even without chromatography.

IMAGING

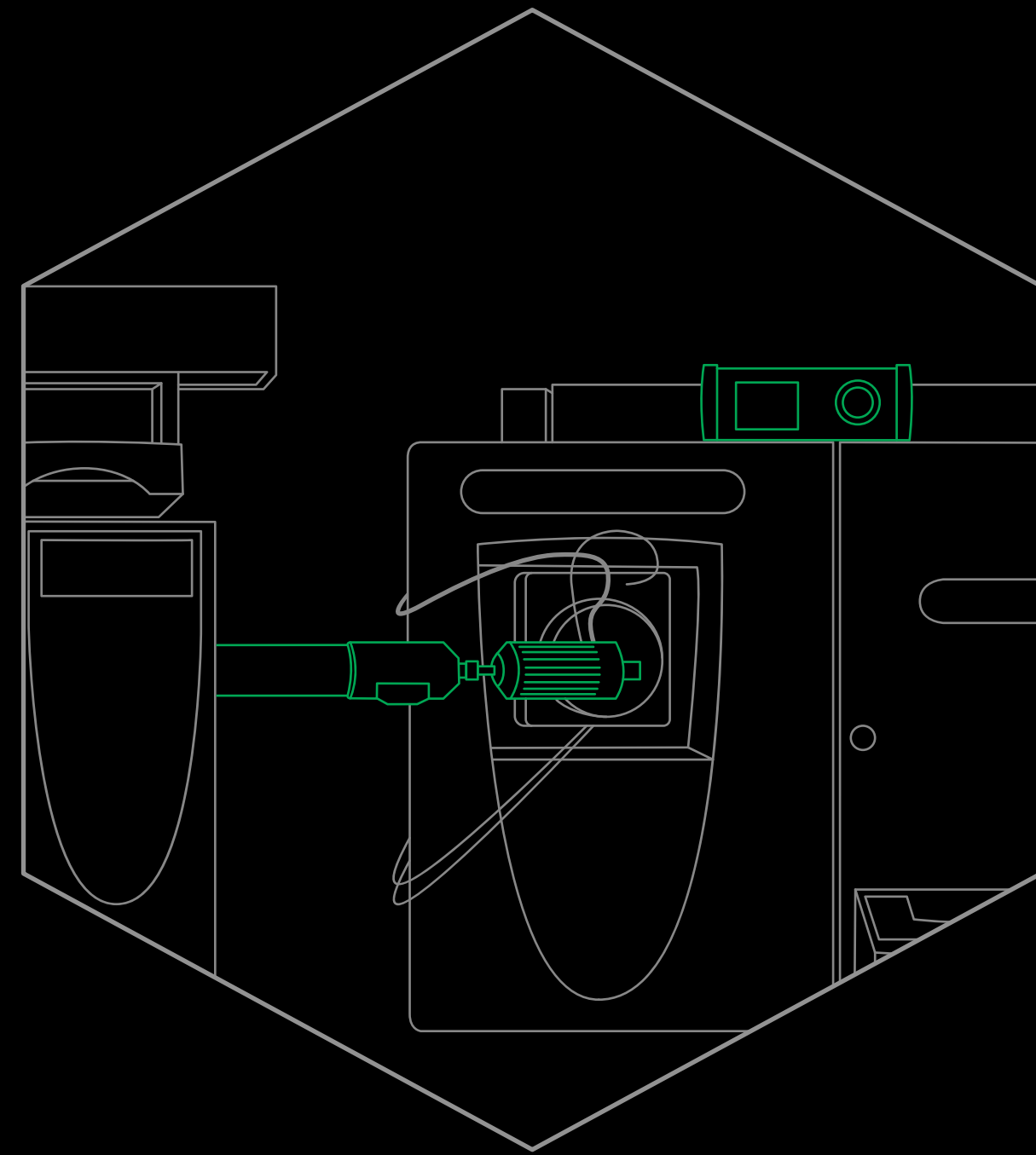
Imaging MS analysis

The SICRIT® Ion Source enables MS imaging solutions with cutting edge resolution based on laser desorption or as post ionization device for MALDI.

CHROMATO GRAPHY

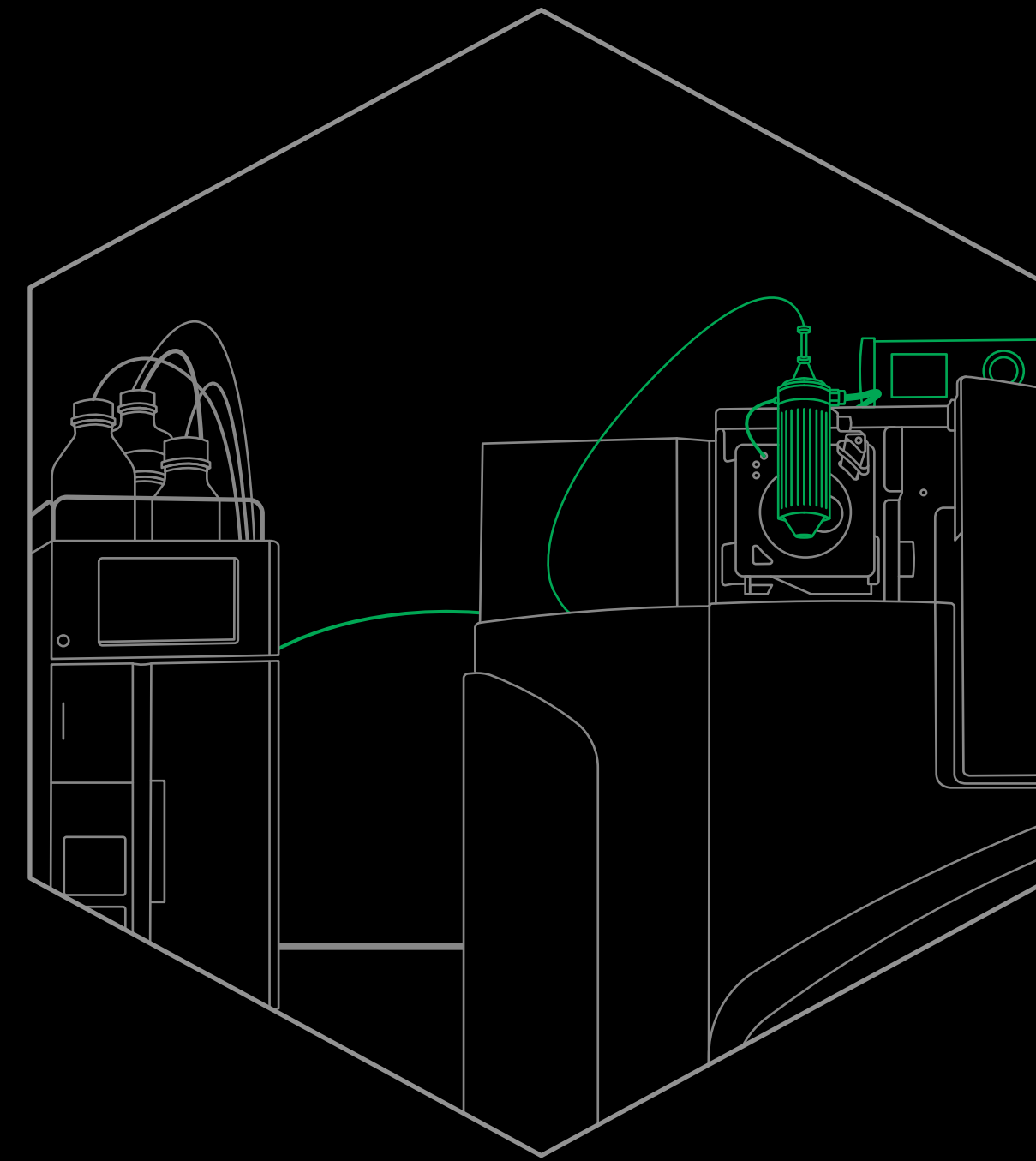
Gas Chromatography (GC) combined with atmospheric-pressure-inlet mass spectrometry (LC-MS)

The SICRIT® Ion Source enables to combine the advantages from GC (highest separation power) and (LC-)MS (soft ionization and higher sensitivity) in one superior solution.



Liquid Chromatography (LC) or supercritical fluid chro- matography (SFC) interfaced with mass spectrometry

The SICRIT® Ion Source enables the interfacing of LC and SFC offering cleaner spectra (less adducts, soft ionization) higher salt tolerance, universal solvent compatibility and broader coverage of ionization.



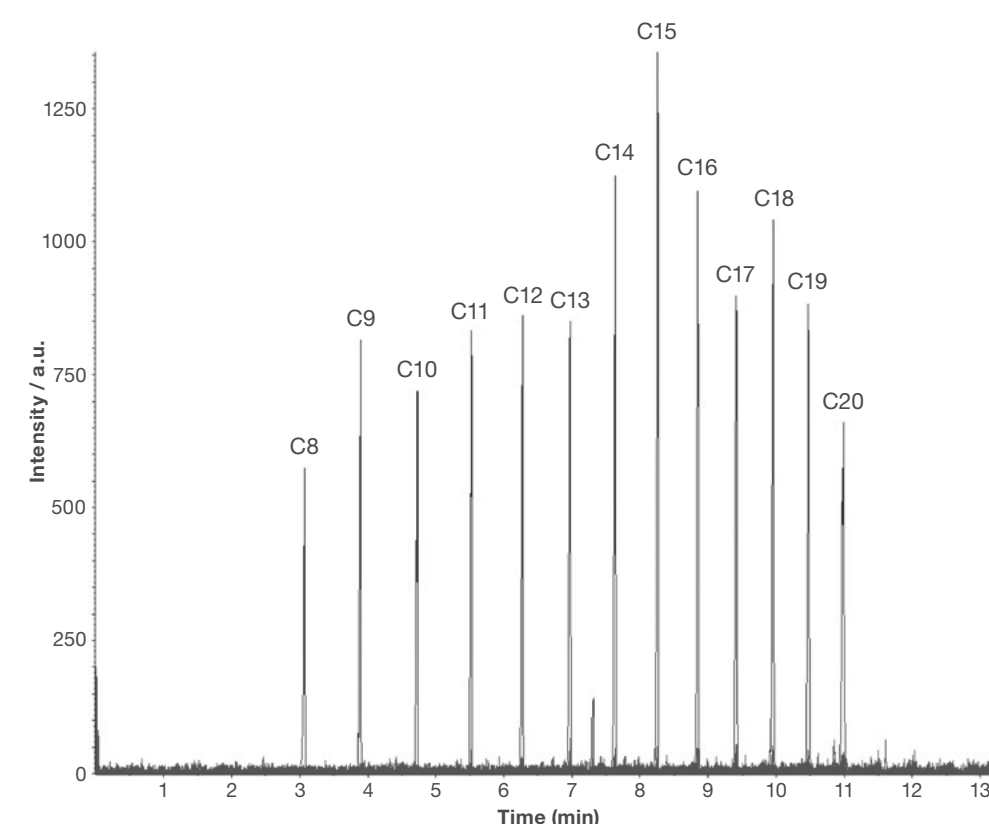
CHROMATOGRAPHY



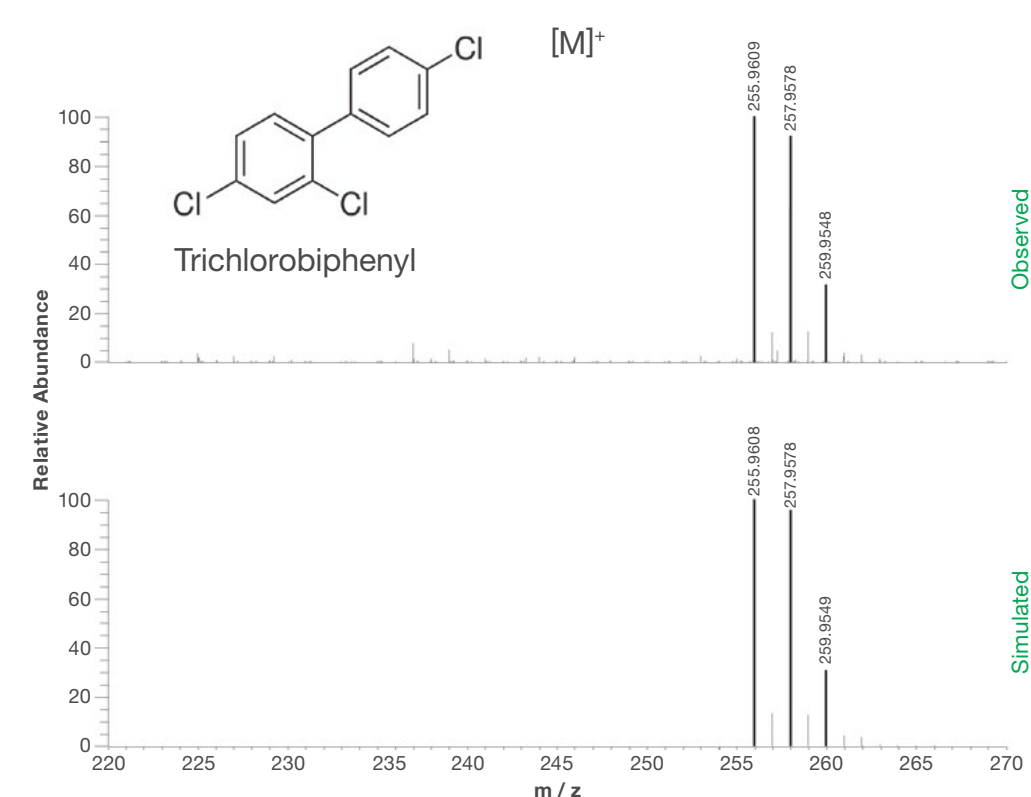
Gas Chromatography (GC) combined with atmospheric-pressure-inlet mass spectrometry (LC-MS)

Enabling a unique range of applications

Separation and soft ionization of n-Alkanes for determination of molecular weights.



Soft ionization of PCBs forms [M]⁺ ions to identify and validate components based on their isotopic pattern.



Sensitive quantification of Nitrosamines by GC-SICRIT[®]-MS based on individual LC-MS MRM transitions.

Compound	Abbreviation	LOD [ng/mL]
N-Nitrosodimethylamine	NDMA	1.2
Diethylnitrosoamine	NDEA	0.1
N-Nitroso-N-methylethylamine	NMEA	0.1
N-Nitrosodipropylamine	NDPA	0.4
N-Nitrosopyrrolidine	NDBA	0.1
1-Nitrosopyrrolidine	NPYR	0.4
1-Nitrosopiperidine	NPIP	0.5

#Alkanes



#PCBs



#Nitrosamines



More information on our website

Want to see more details and additional applications? Visit www.plasmion.com

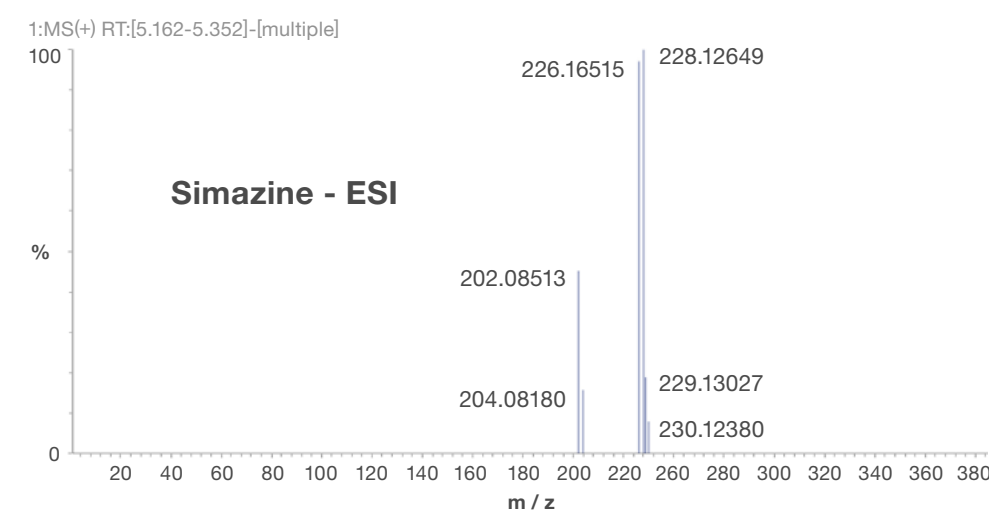
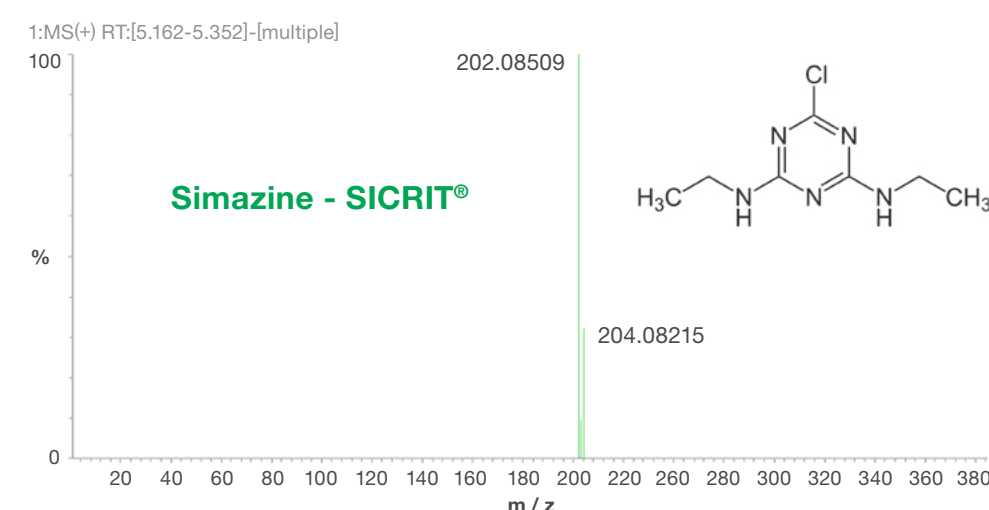
CHROMATOGRAPHY



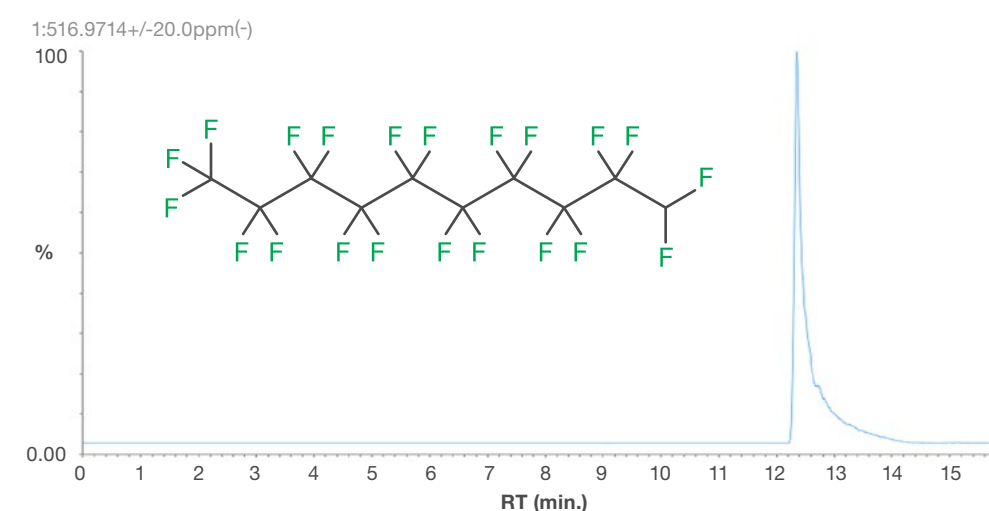
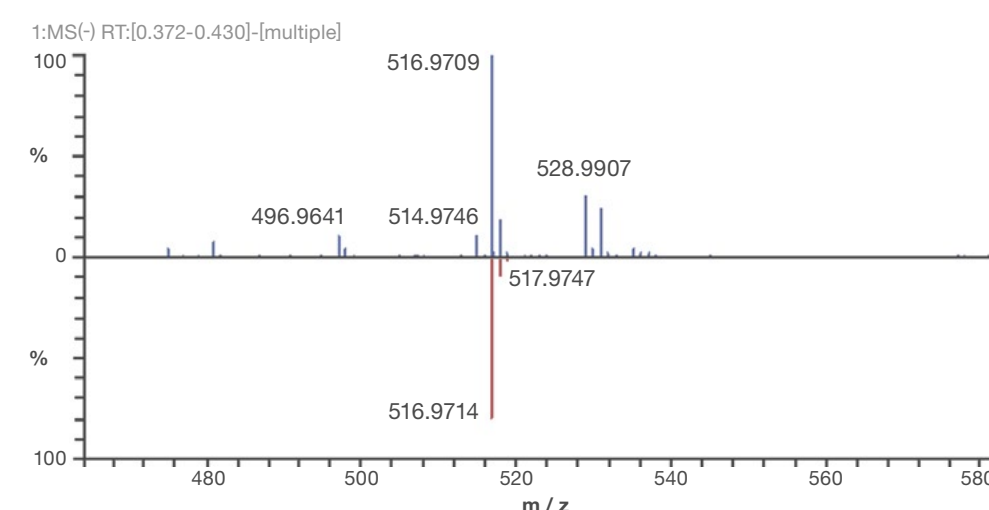
Liquid Chromatography (LC) combined with atmospheric-pressure-inlet mass spectrometry (LC-MS)

Providing cleaner spectra and unique analysis capabilities

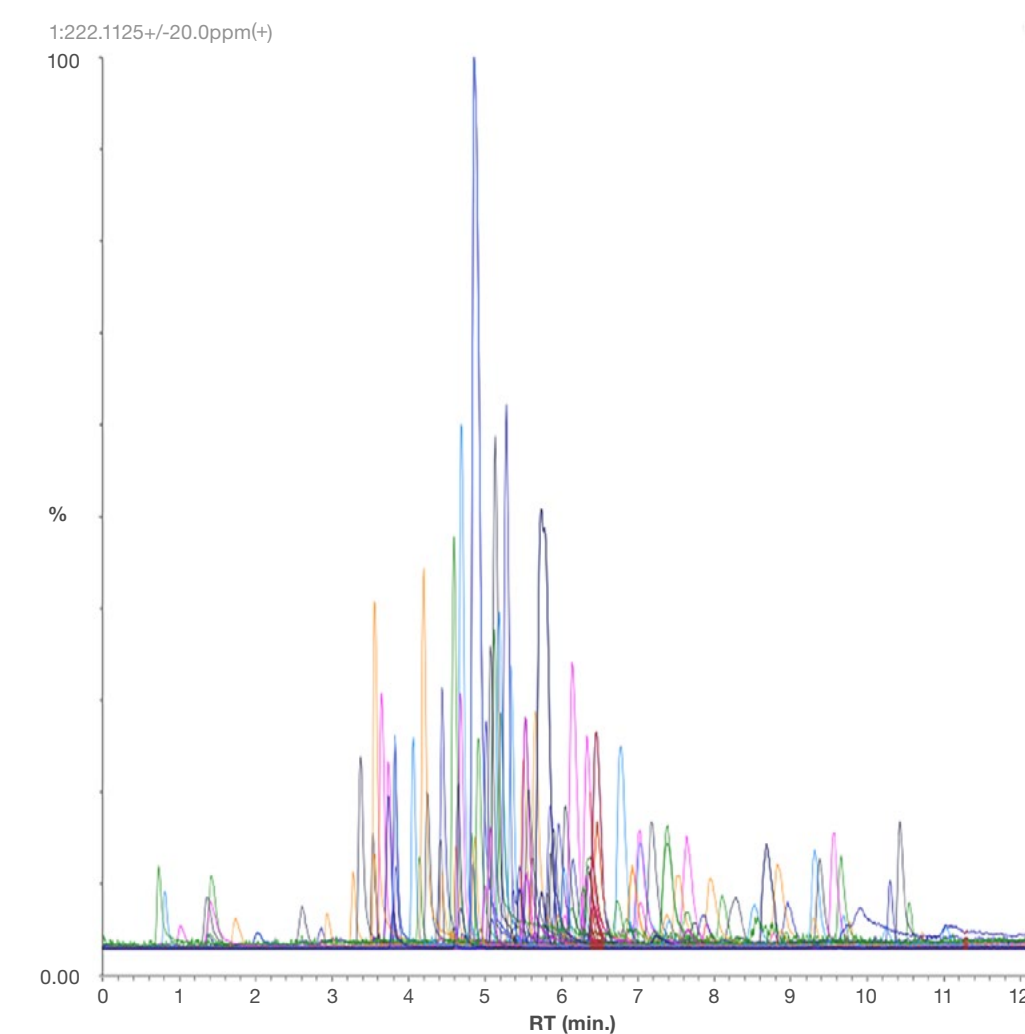
Soft ionization of compounds without sodium or potassium adducts.



Detection of perfluorinated Alkanes (not accessible by ESI, APCI or APPI).



Routine detection of Pesticides with superior tolerance for salts, solvents and matrix.



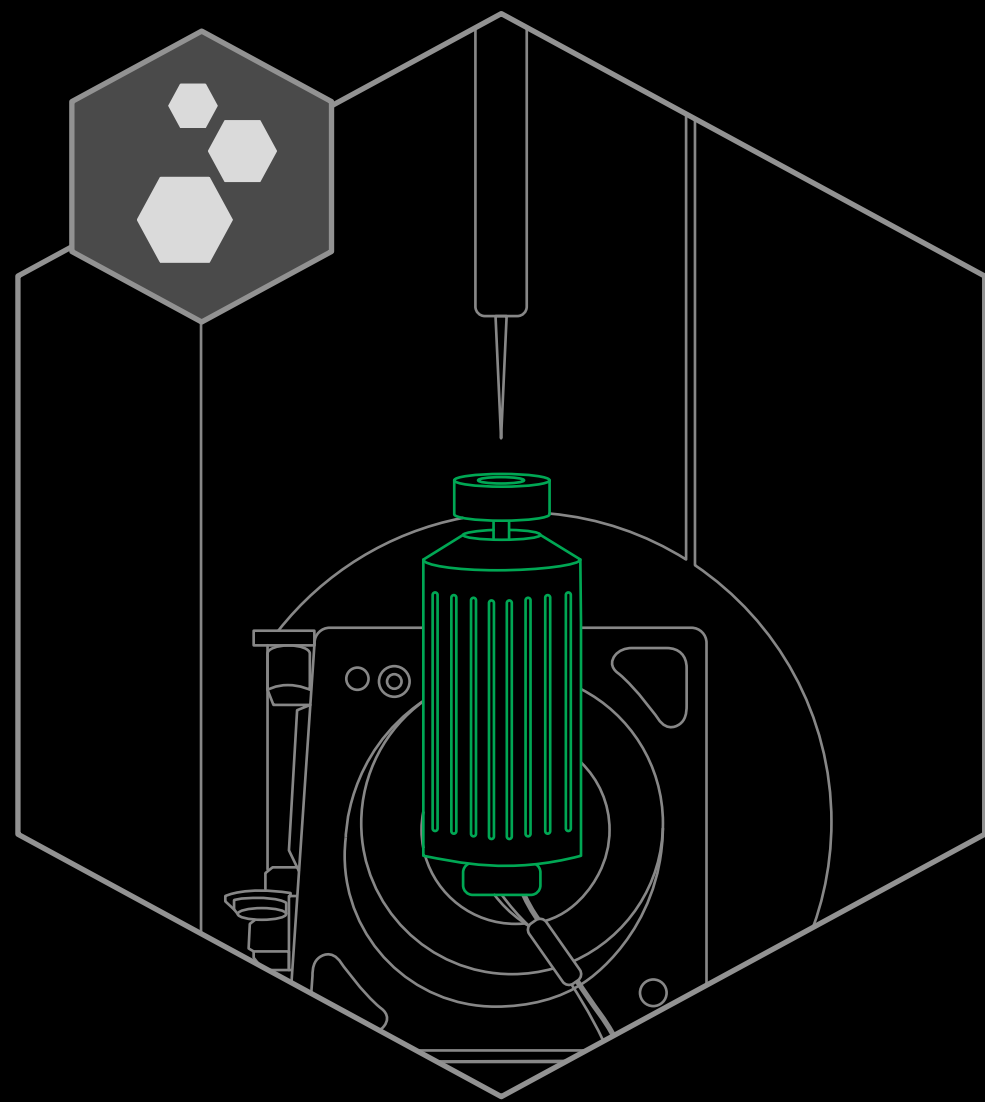
#Nitrosamines



More information on our website

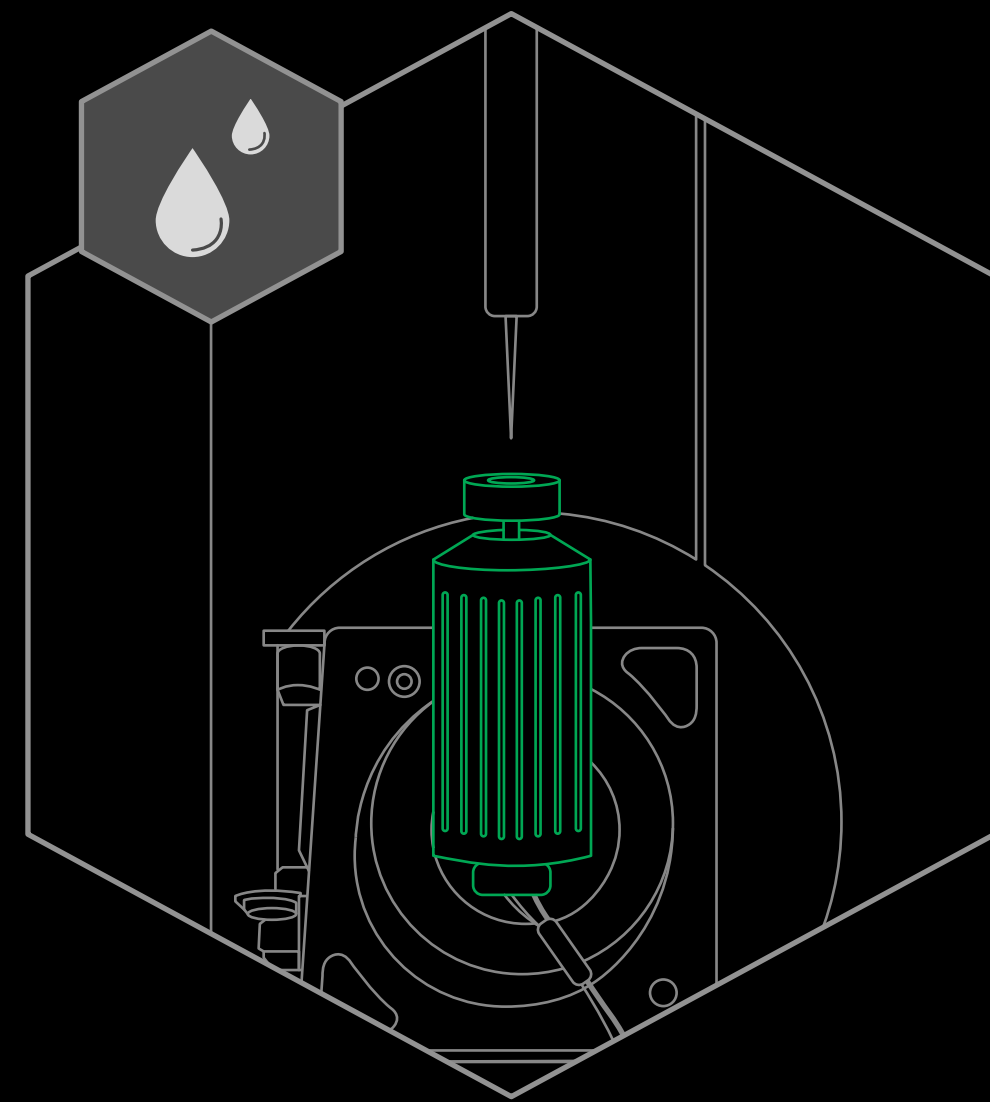
Want to see more details and additional applications? Visit www.plasmion.com

DIRECT MS



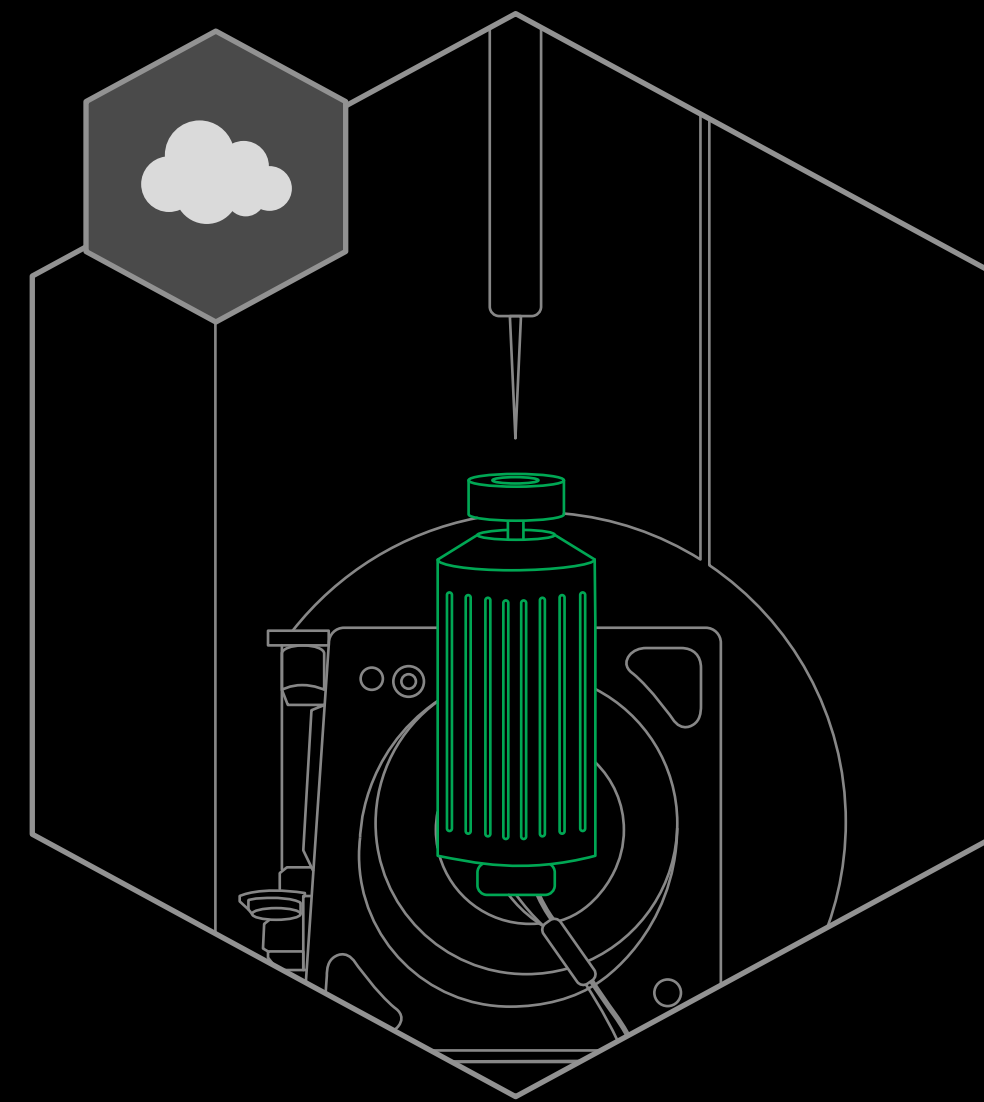
Direct analysis of solid samples via thermal desorption

The SICRIT® Ion Source in combination with the GC/SPME-module enables thermal desorption of SPME fibers for a direct and quantitative analysis of solid samples.



Direct analysis of liquid samples via vaporization

The SICRIT® Ion Source in combination with the GC/SPME-module enables vaporization and quantitative analysis of liquid samples.

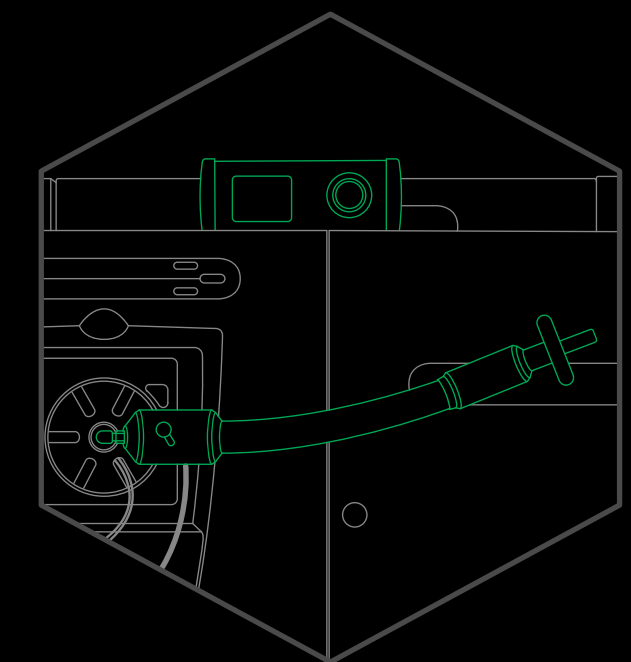
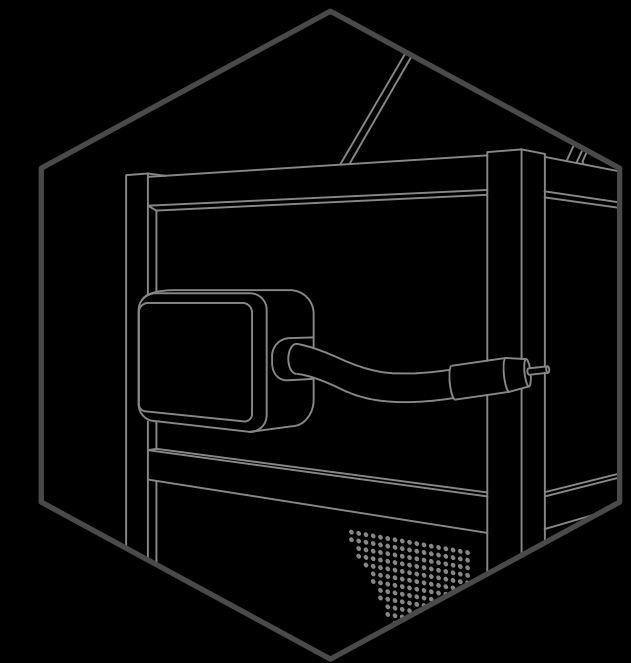


Direct analysis of gas samples via direct injection

The SICRIT® Ion Source in combination with the GC/SPME-module enables direct quantitative headspace measurements of gaseous samples.



Industrial VOC sensor for automated decision making based on direct MS analysis.



Direct MS-based breath analysis.

DIRECT MS

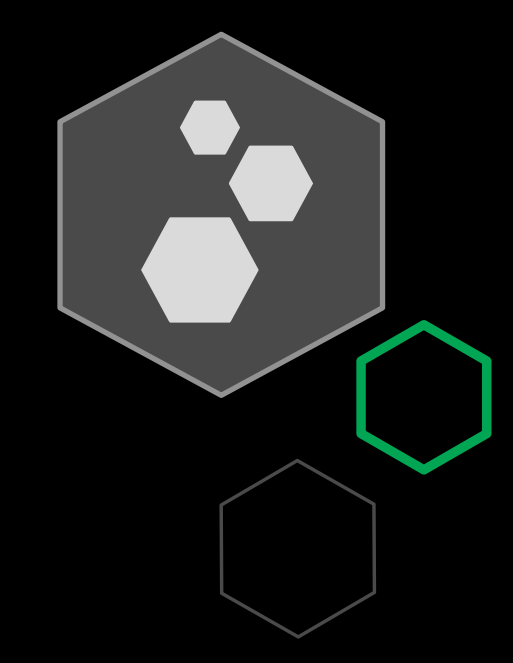
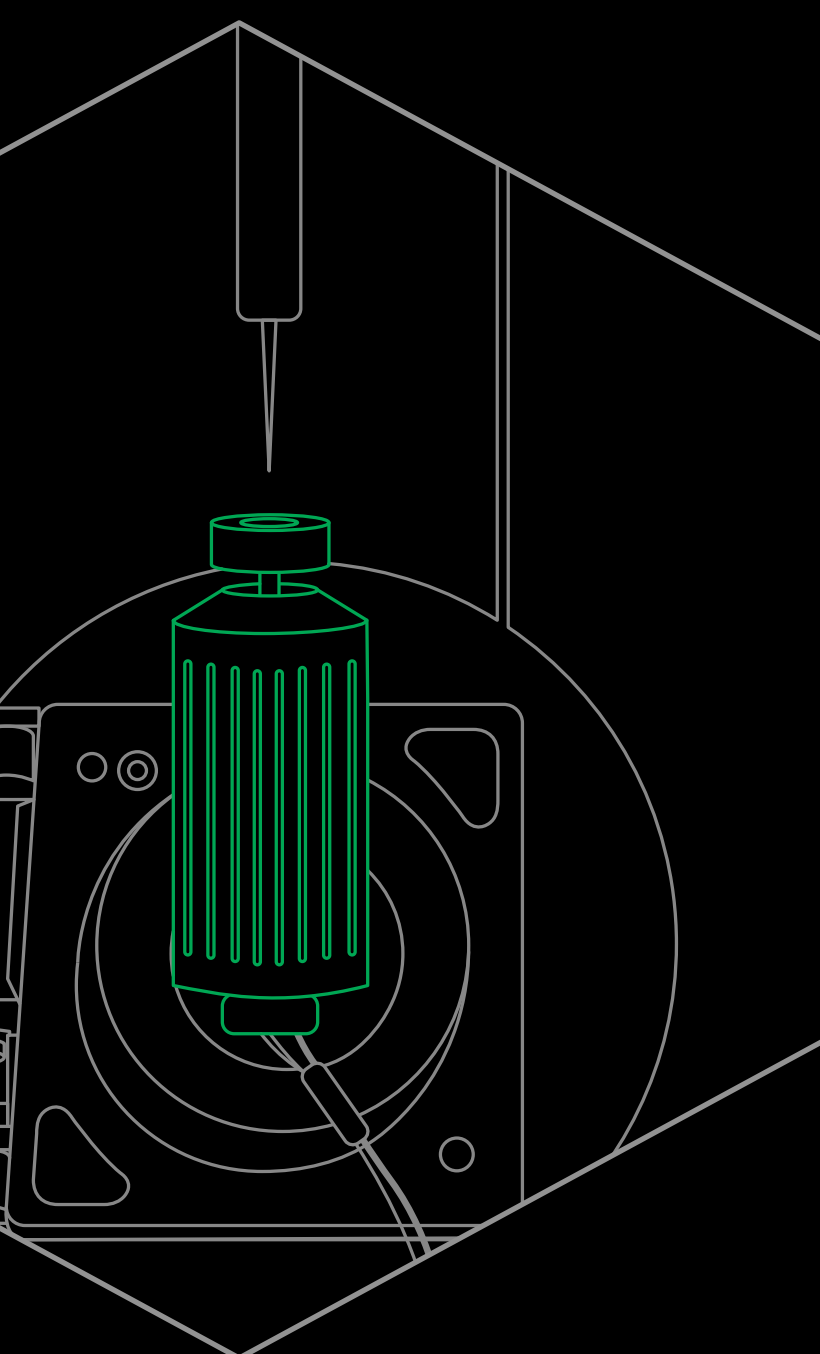
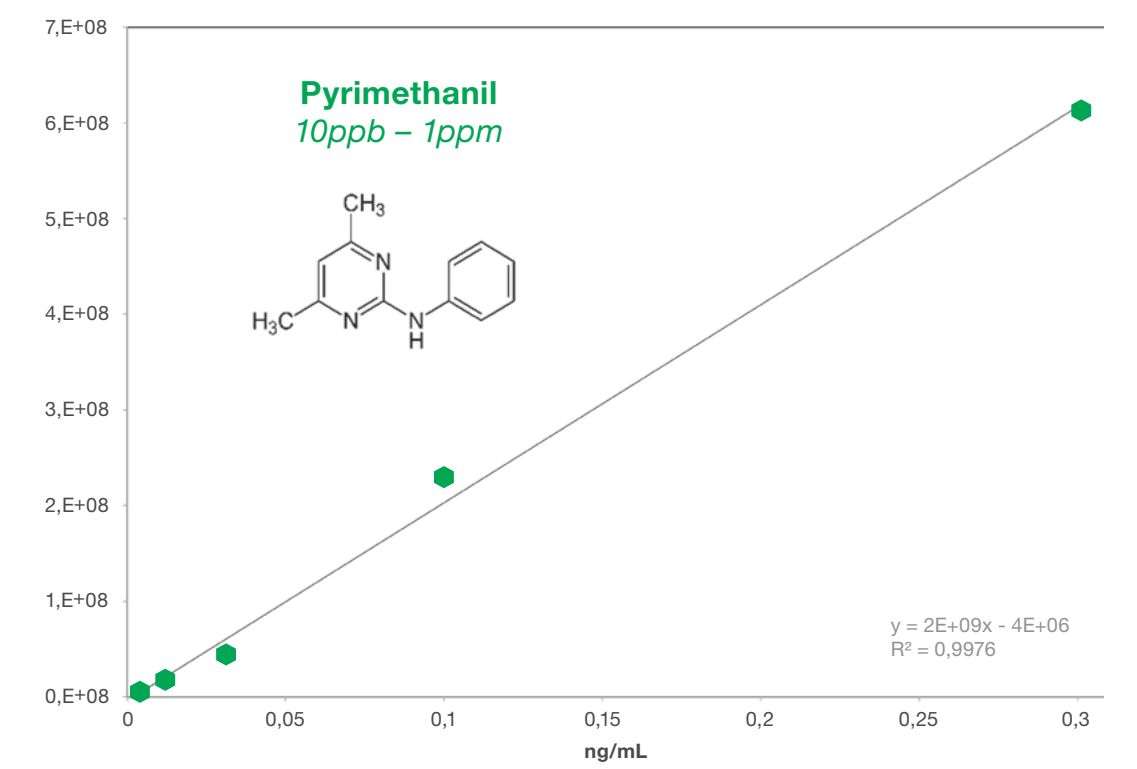
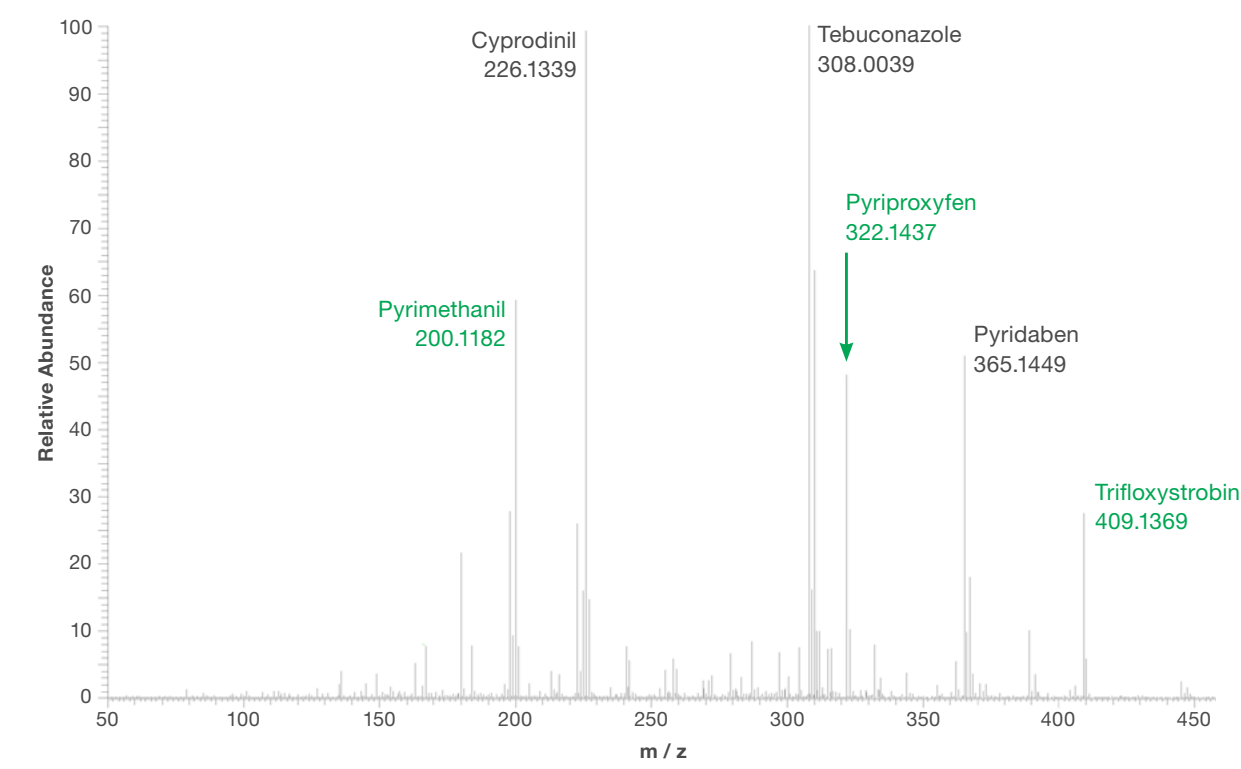
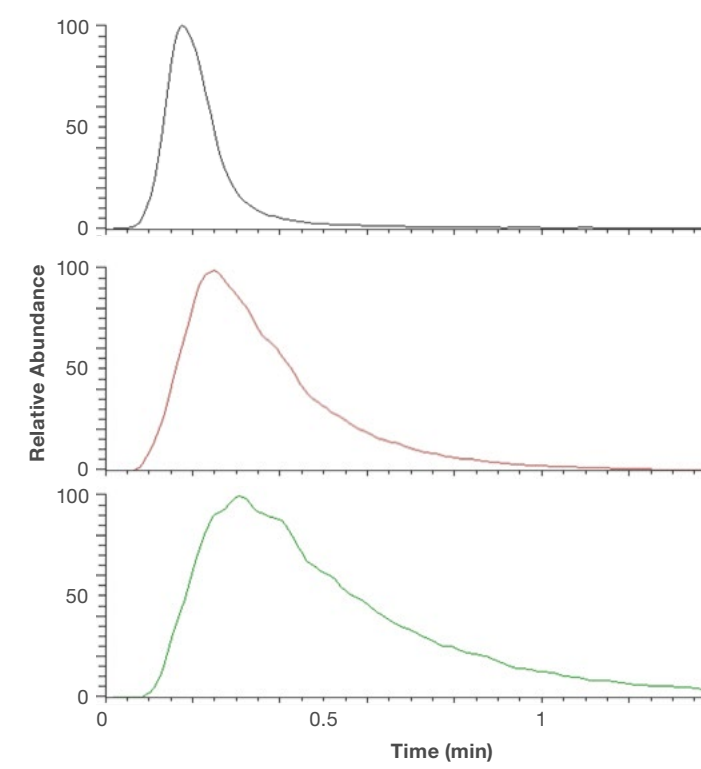
Direct quantitative MS analysis of solid samples

Fast, easy, no sample preparation

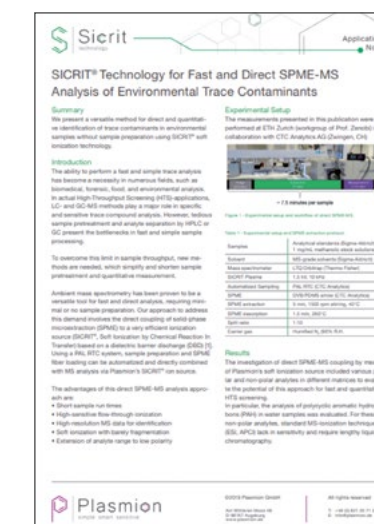
Parallel desorption of pesticides from SPME fibers analyzing soil samples.

Simultaneous detection due to soft ionization with minimal to no fragmentation.

Fully quantitative results without chromatography.



#SPME



#Thermal desorption



More information on our website

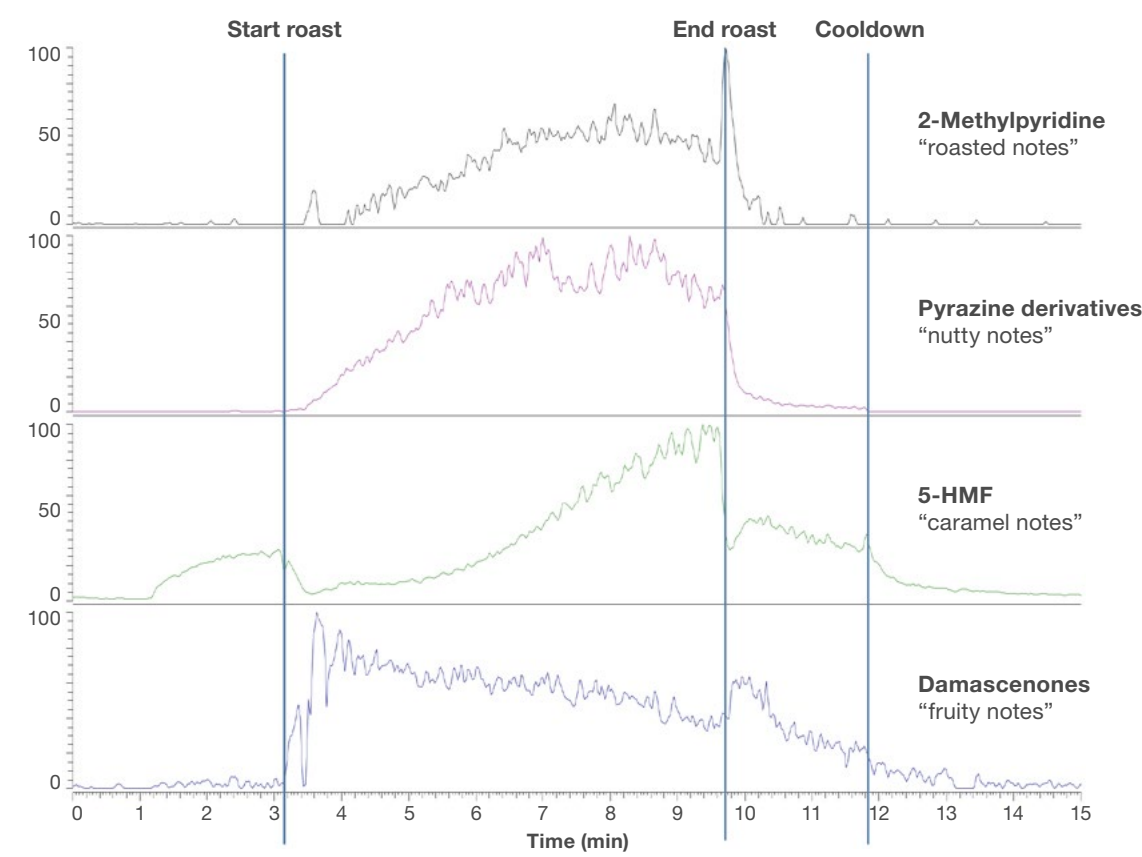
Want to see more details and additional applications? Visit www.plasmion.com

DIRECT MS

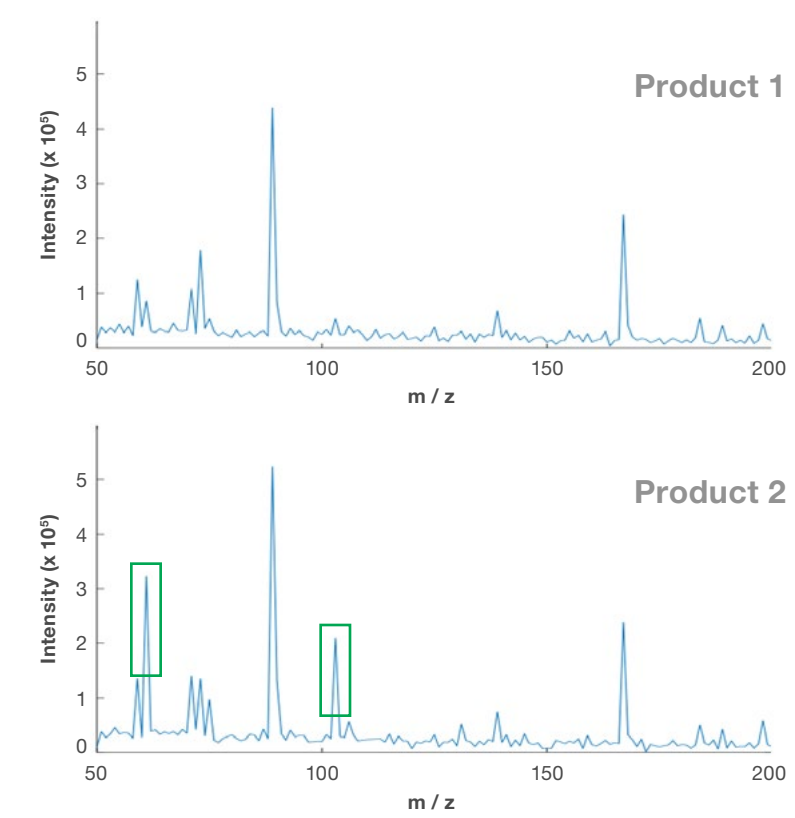
Direct headspace & gas phase analysis

Measure & quantify samples and processes in real-time

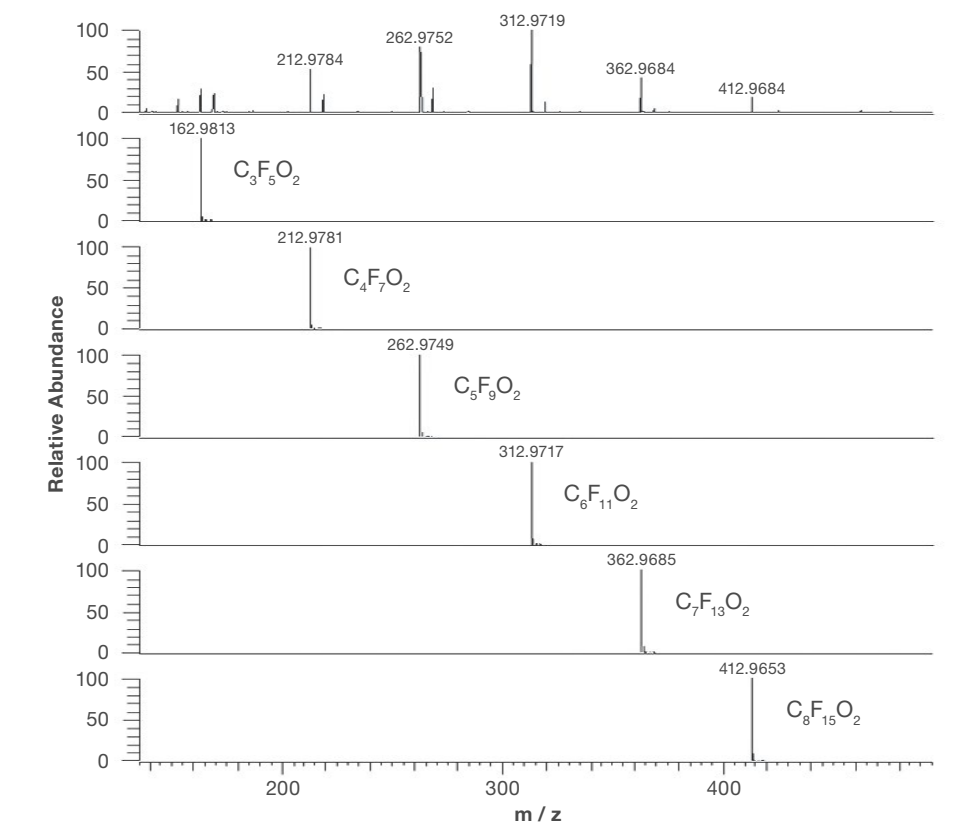
Parallel online-monitoring of 500+ aroma compounds during coffee roasting.



Analysis of aroma fingerprints and off-flavors or contaminations.



Headspace HRMS analysis of PFCAs in coating powder formulation.



#PFCA



#Coffee



More information on our website

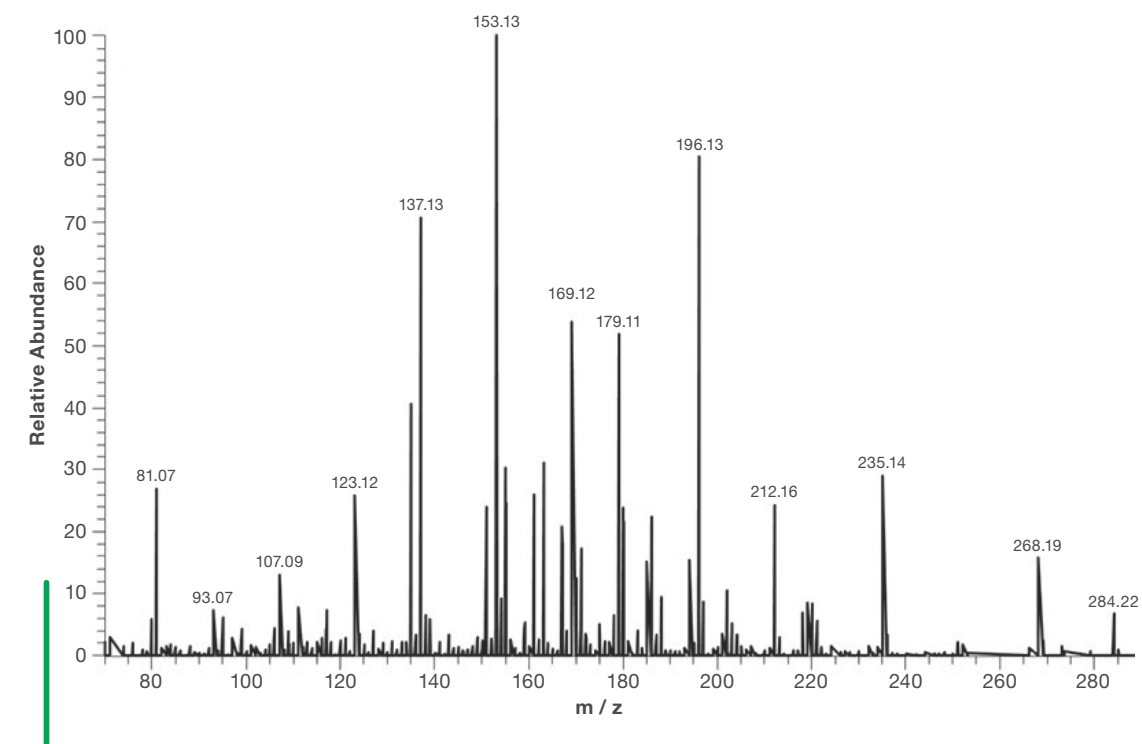
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DIRECT MS

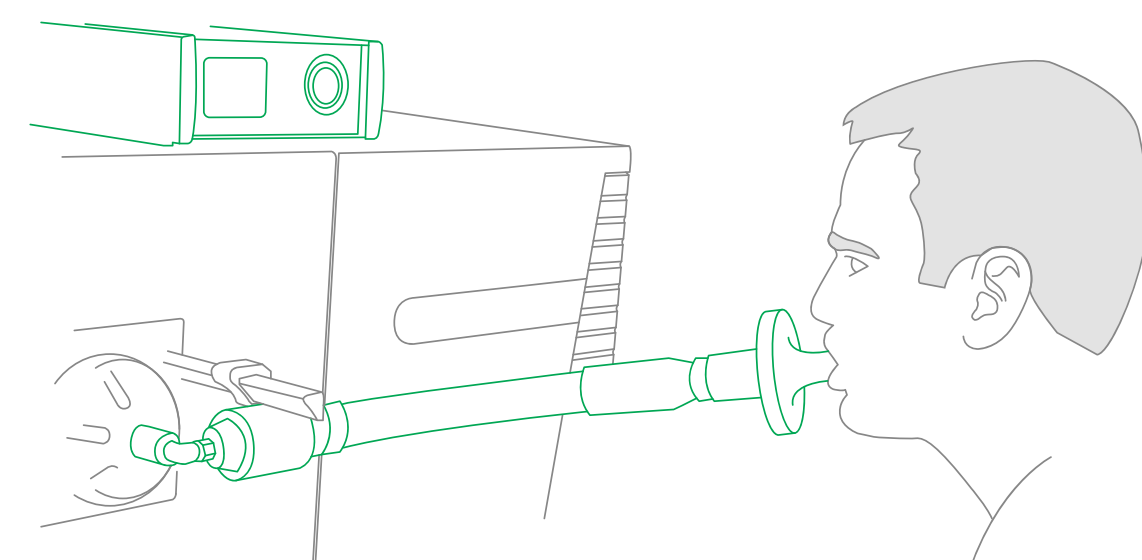
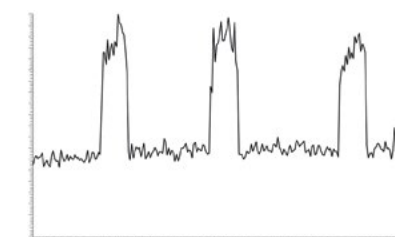
Direct MS-based breath analysis

Enabling biomarker discovery & metabolism monitoring

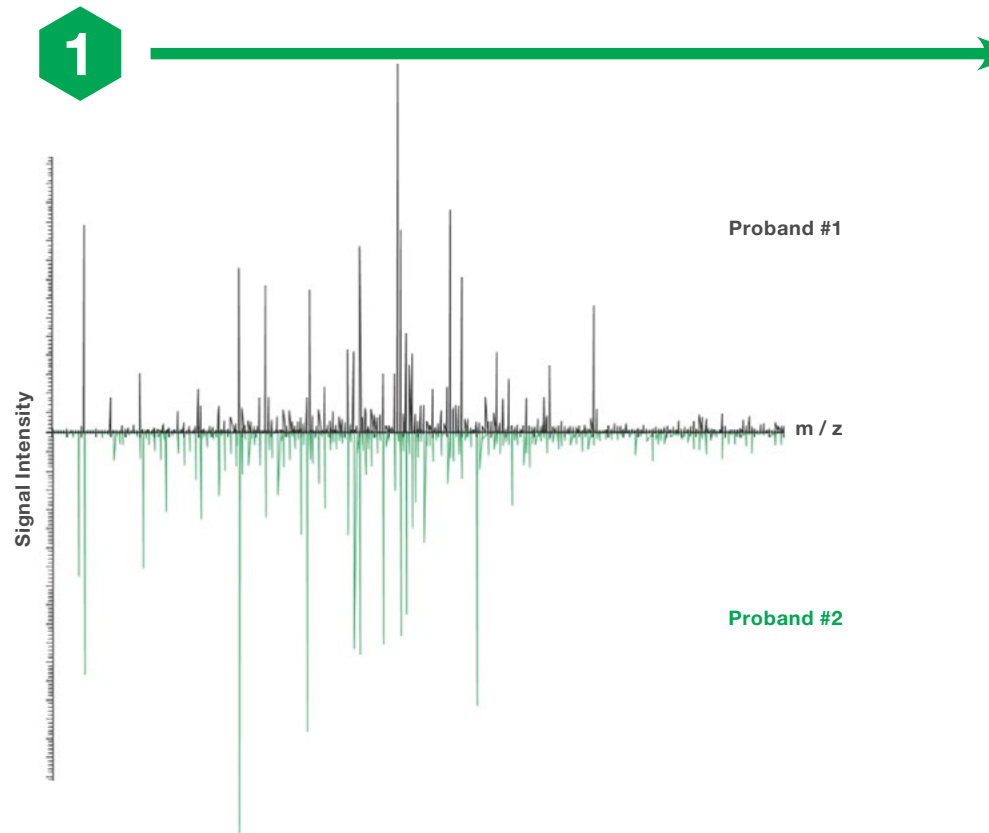
Non-invasive sampling of patient's breath for volatolom analysis in real-time.



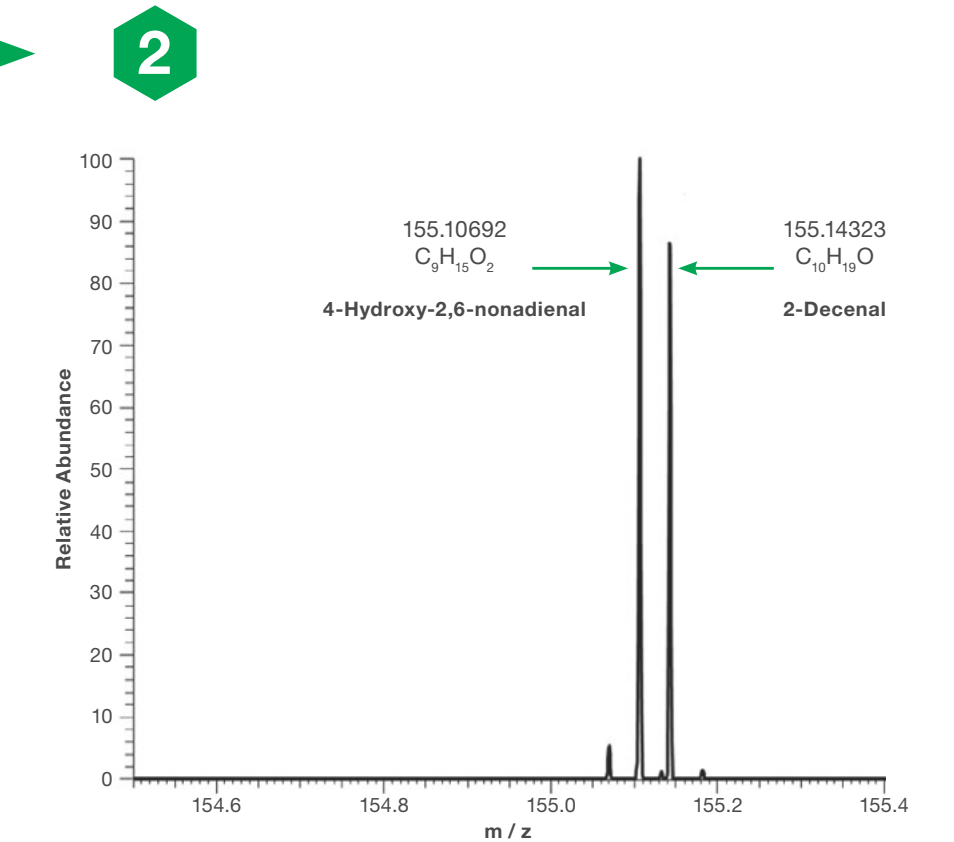
Exhalations



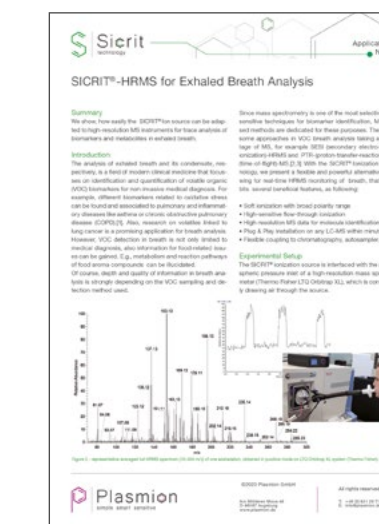
Patient profiling based on VOC patterns and dedicated data evaluation tools.



Target/non-target Biomarker identification based on exact molecular mass.



#Breath



More information on our website

Want to see more details and additional applications? Visit www.plasmion.com

DIRECT MS

HaVoc[®] – a simple but powerful sensory system for automated in-line quality monitoring of aroma and VOC

The HaVoc enables the use of laboratory grade MS-Systems as automated VOC sensors in an industrial environment. It serves the Industry 4.0 demand of highly sensitive but easy to use real-time sensors. Up to now, in-line process control at laboratory grade was simply not affordable due to high instrumental and human effort in sample preparation. The HaVoc system now provides an affordable automated “lab in a box” sensor solution for almost any chemical analysis in industry.

Simplicity

Customizable and easy to use software workflow ensures acceptance amongst users

Flexibility

Extendable inlet enables to access also difficult sampling spots

Mobility

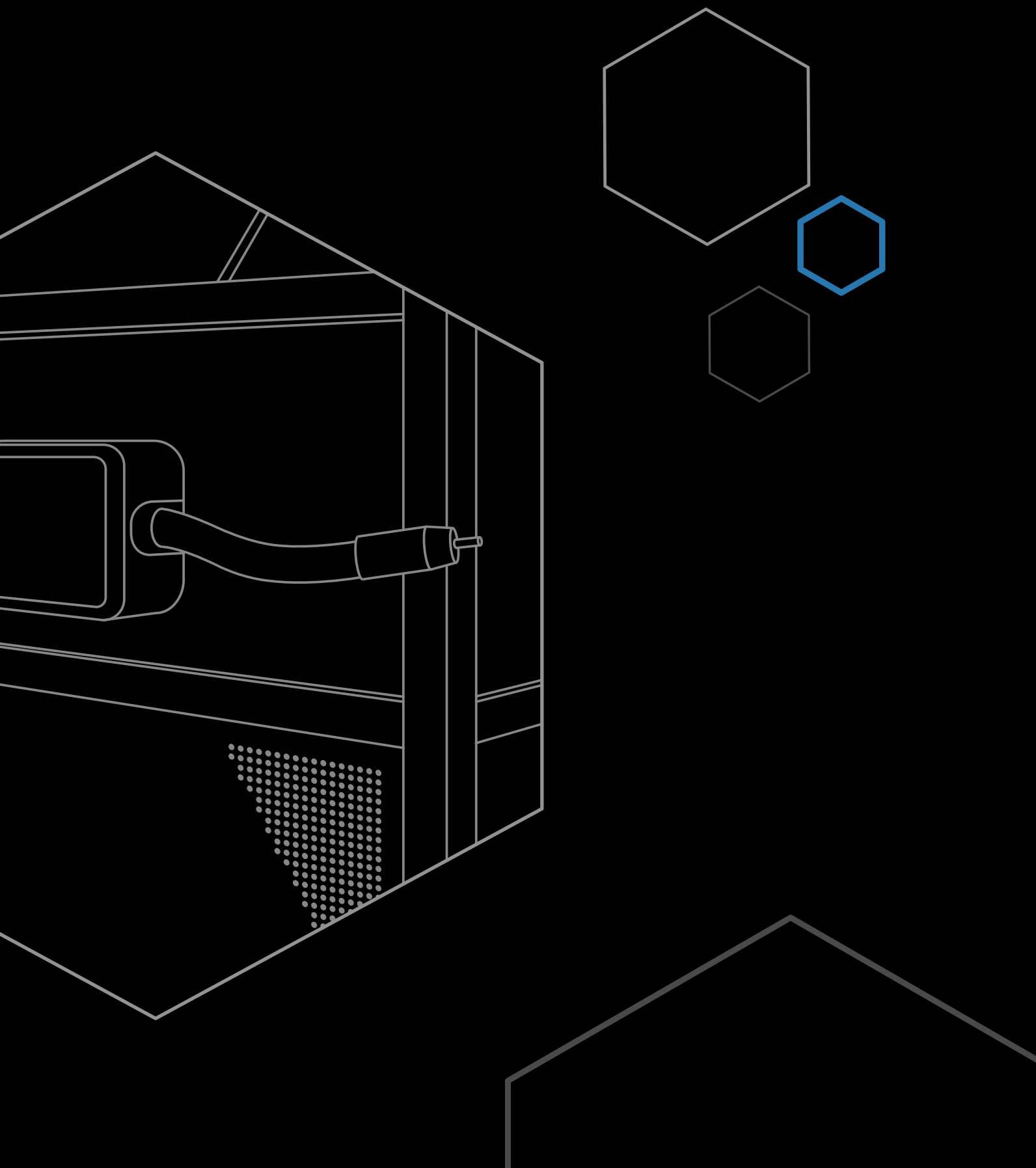
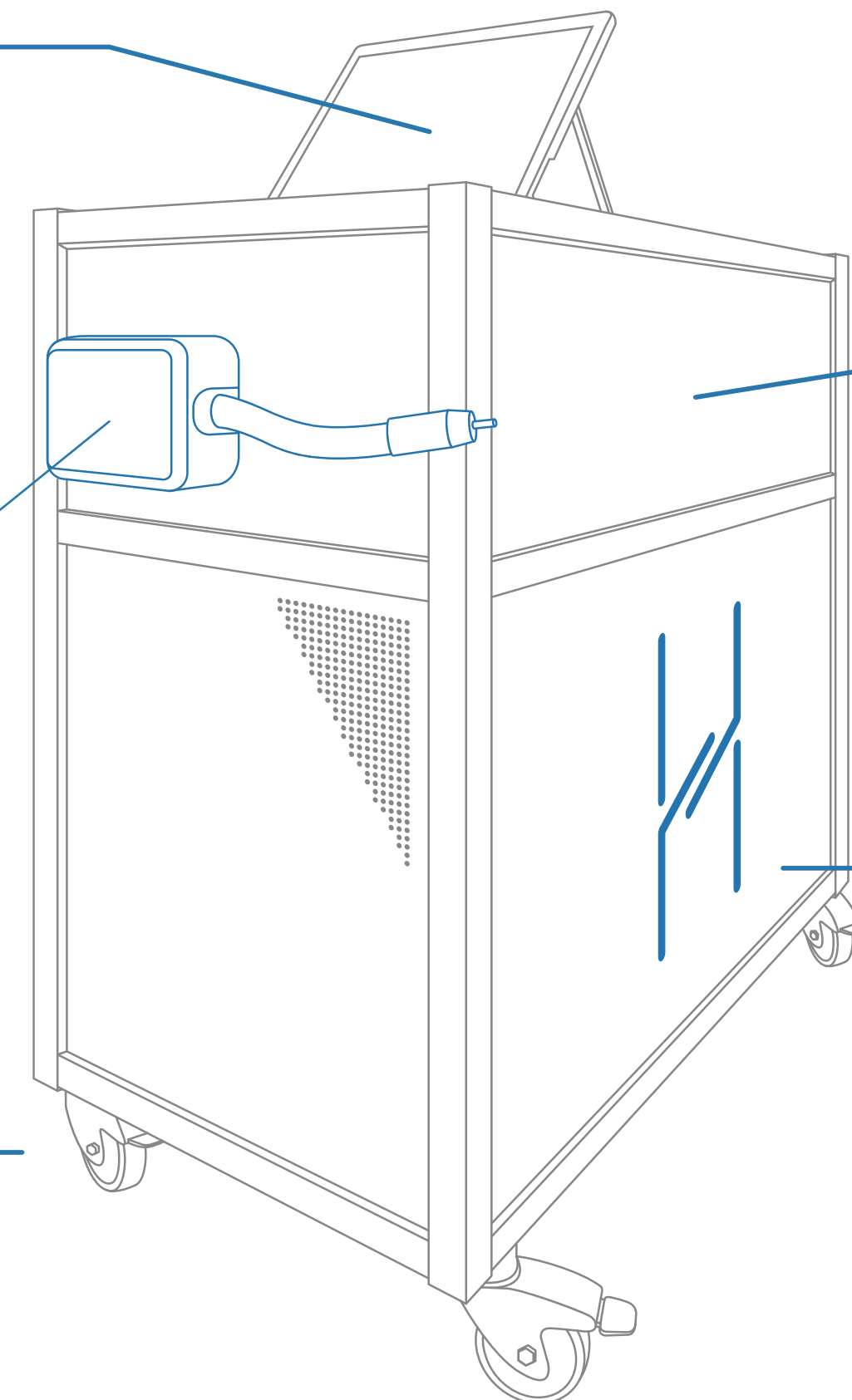
Wheels combined with lightweight chassis ensure mobility

Performance

High-end laboratory equipment enables realization of even challenging use cases

Cost

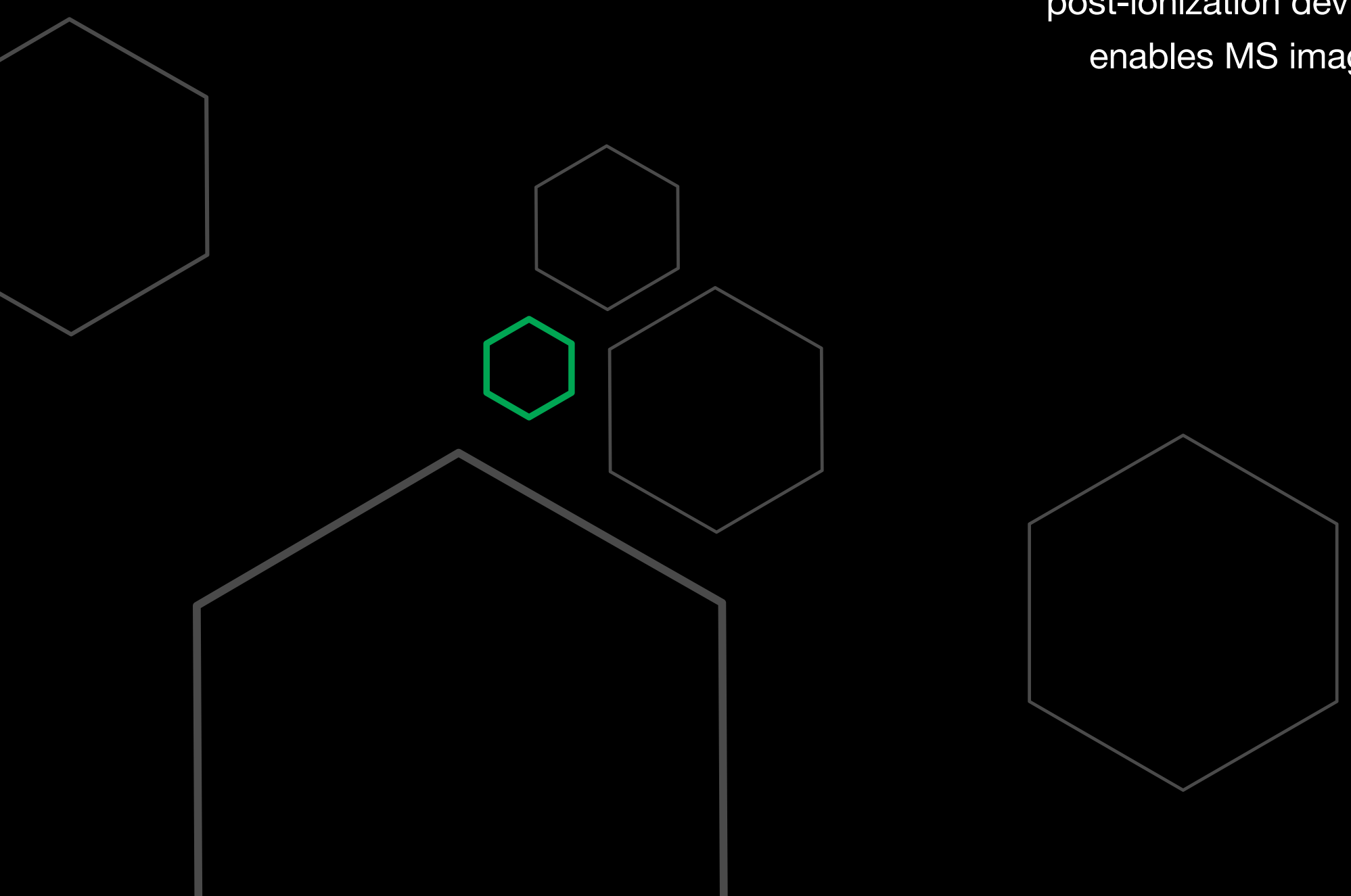
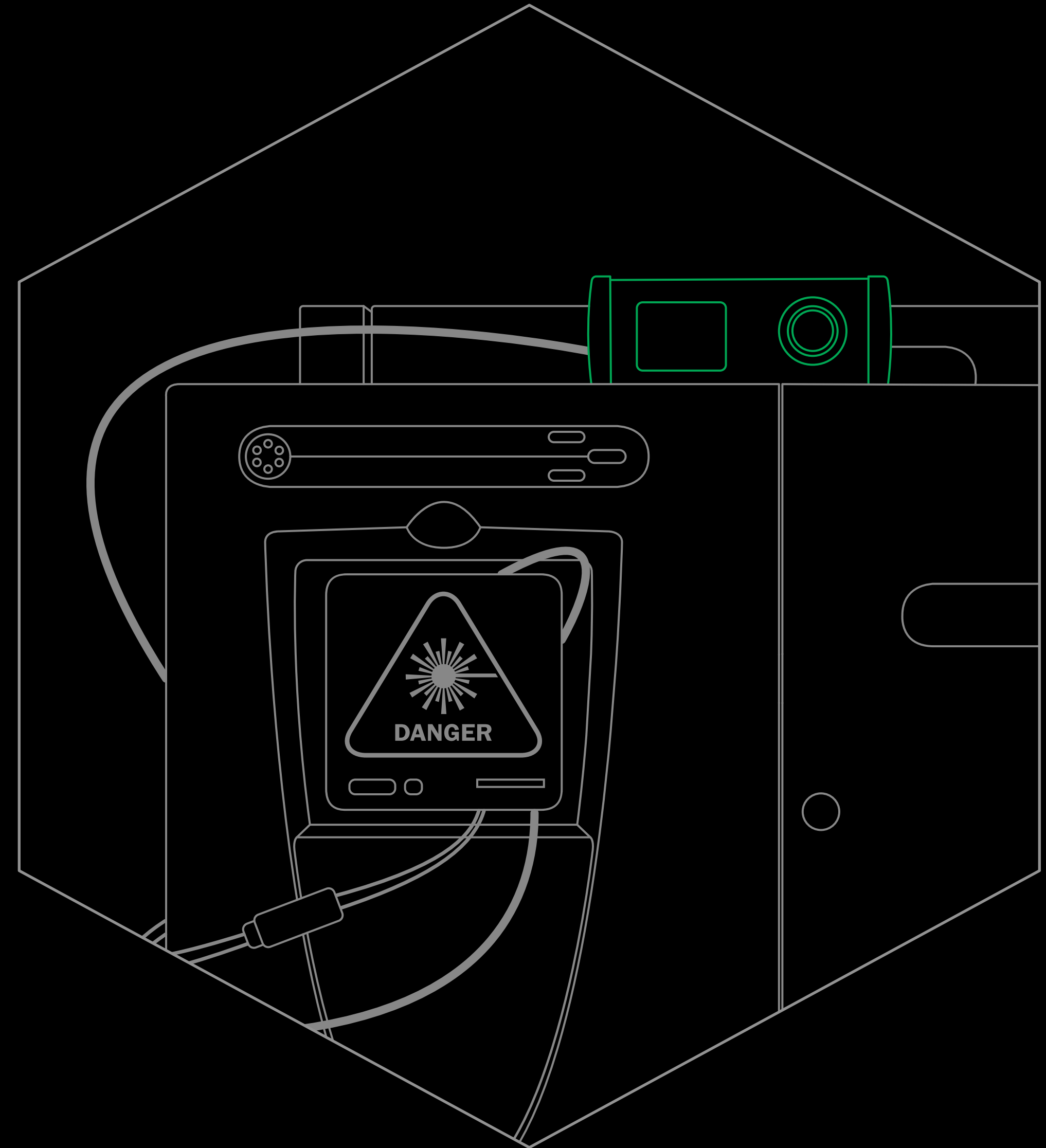
Customizable hardware enables cost efficient composition as per use case requirements



MS IMAGING

Imaging MS Analysis

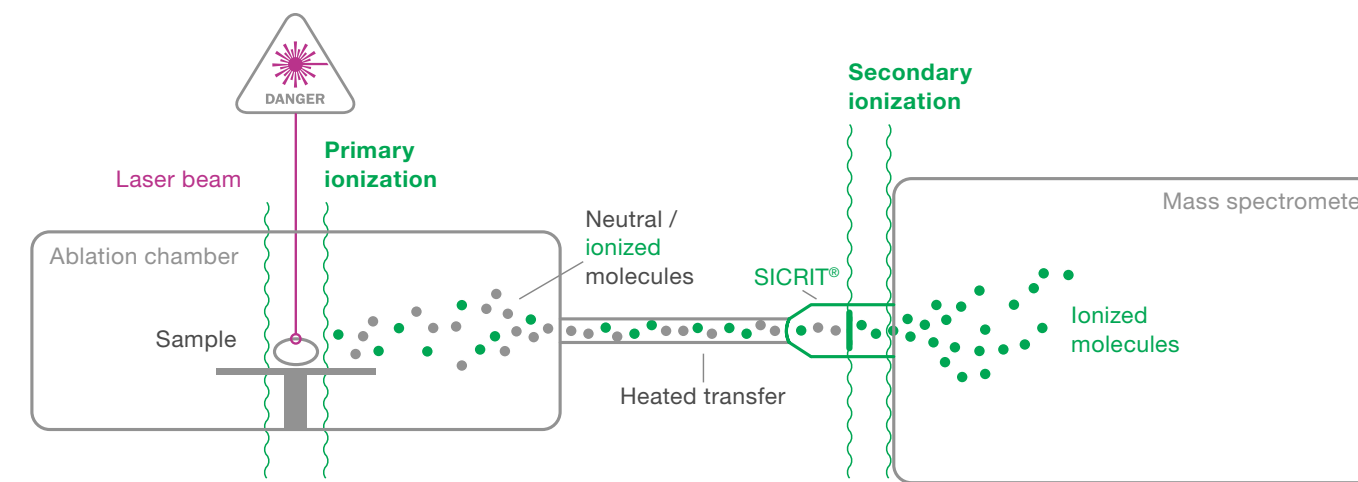
The SICRIT[®] Ion Source in combination with a laser ablation setup or as post-ionization device for (AP-)MALDI enables MS imaging down to 5 μ m.



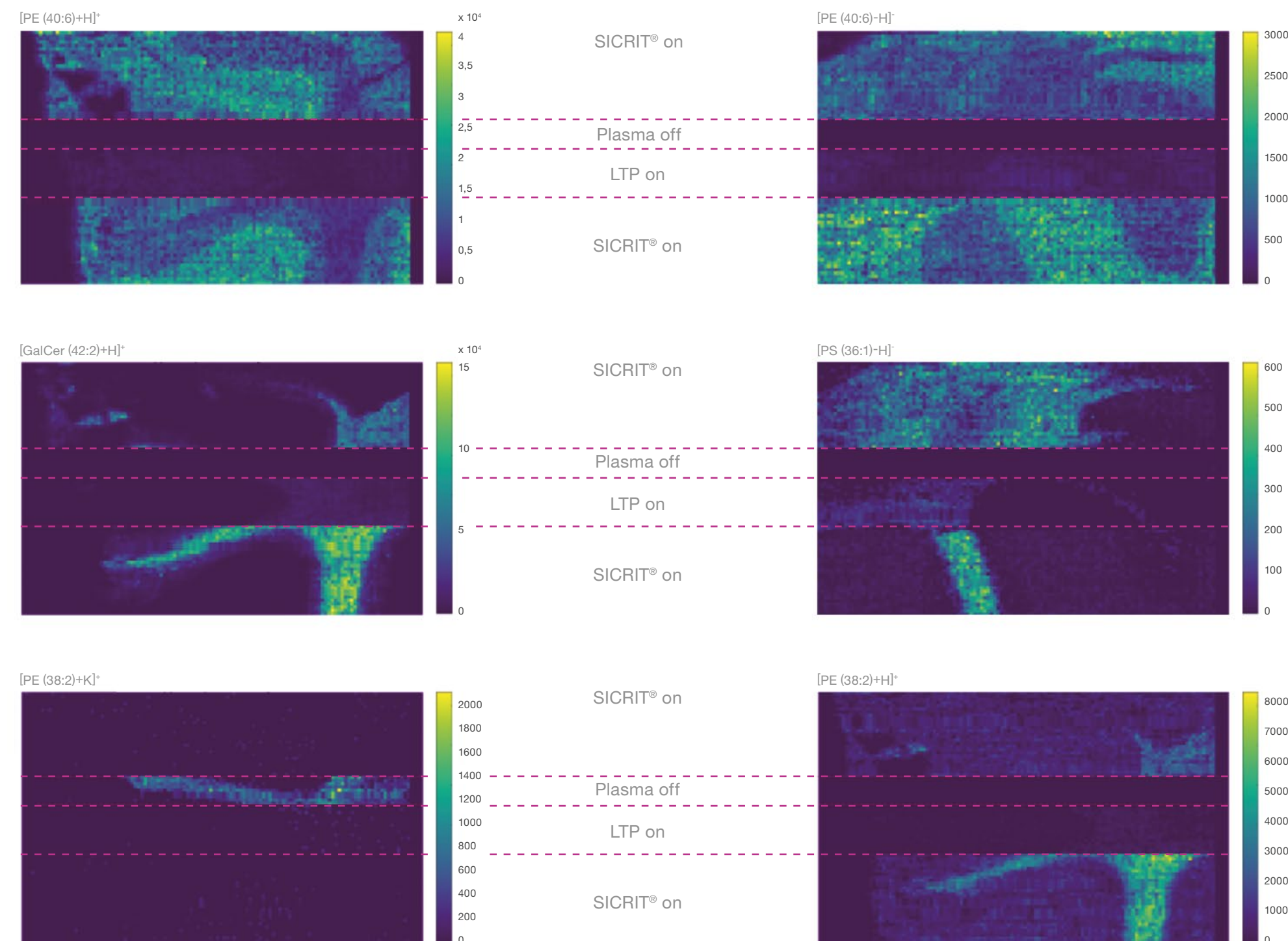
MS IMAGING

Imaging MS analysis

Post-ionization in AP-MALDI imaging



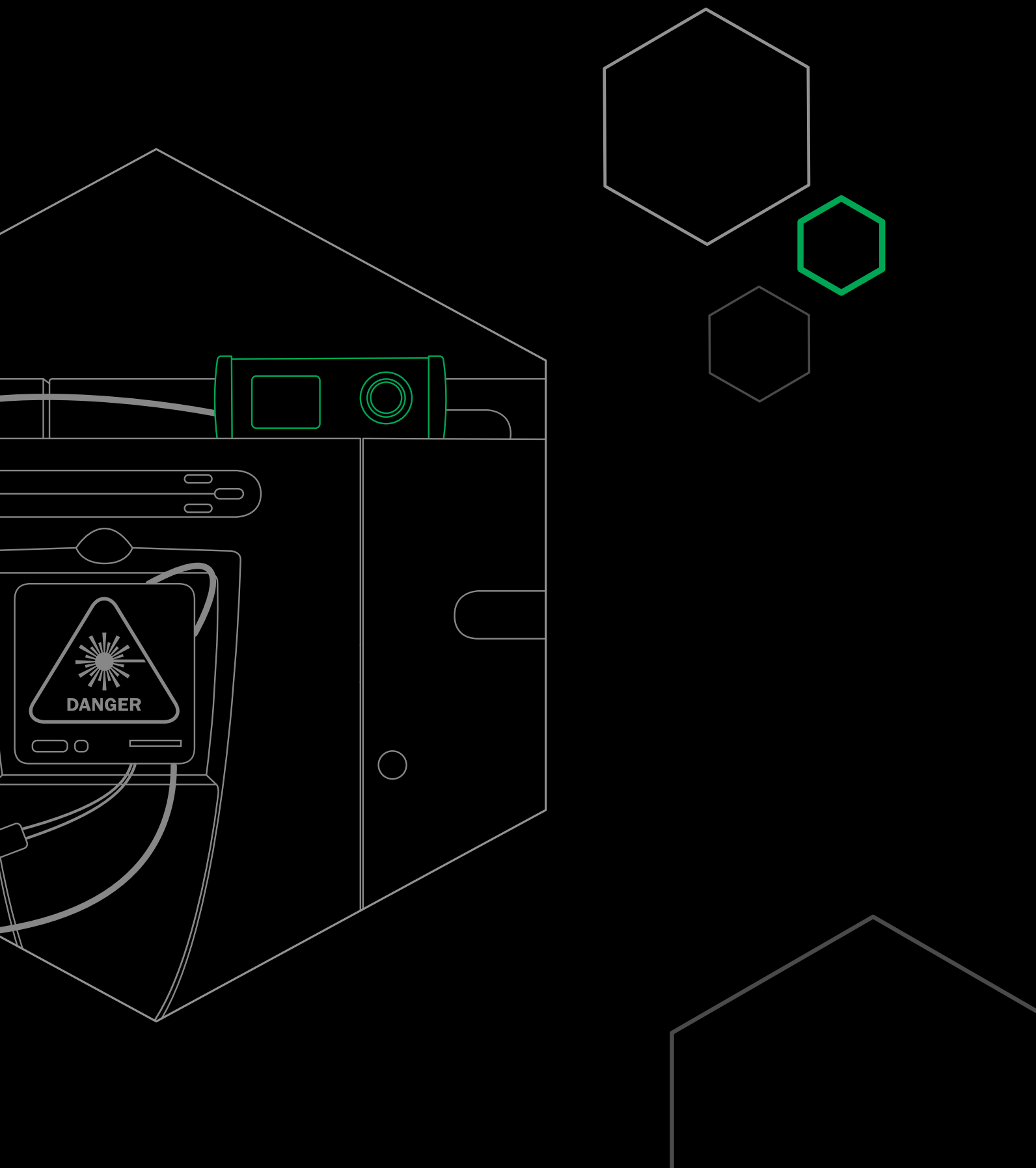
Using the flow-through SICRIT[®] Ion Source as post-ionization device for AP-MALDI imaging allows to ionize/visualize additional molecules that have not been ionized with the primary ionization source.



“ The ease with which the SICRIT[®] device can be installed and the minimal need for optimization presents this commercially available tool as an attractive method for simple post-ionization for any AP-MALDI MS imaging. ”

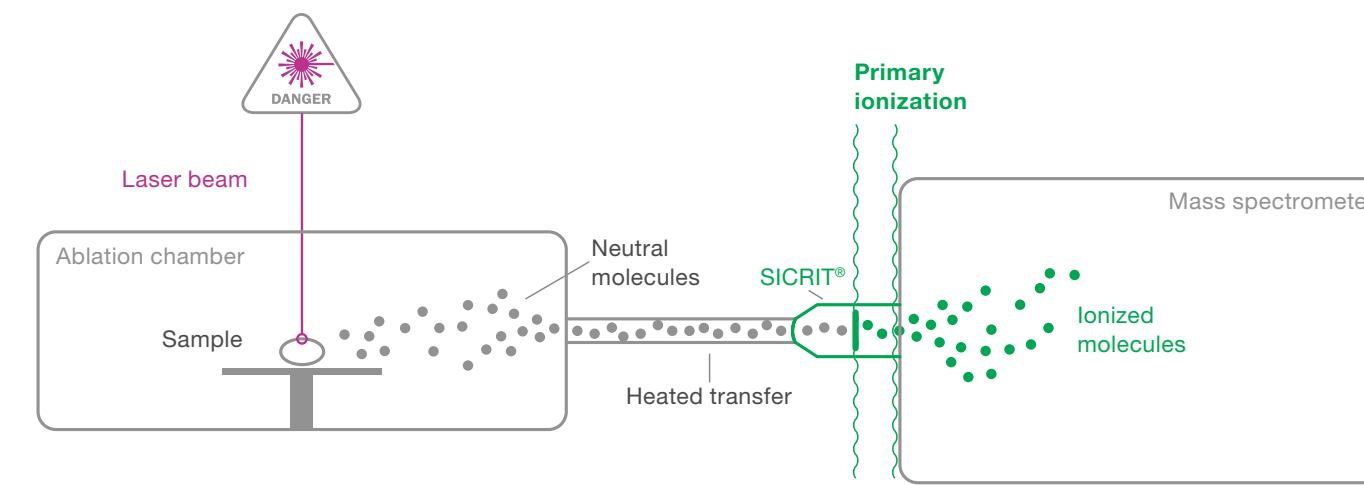
Elia, E.A. et al, *Anal. Chem.* 2020, 92, 15285-15290

MS IMAGING

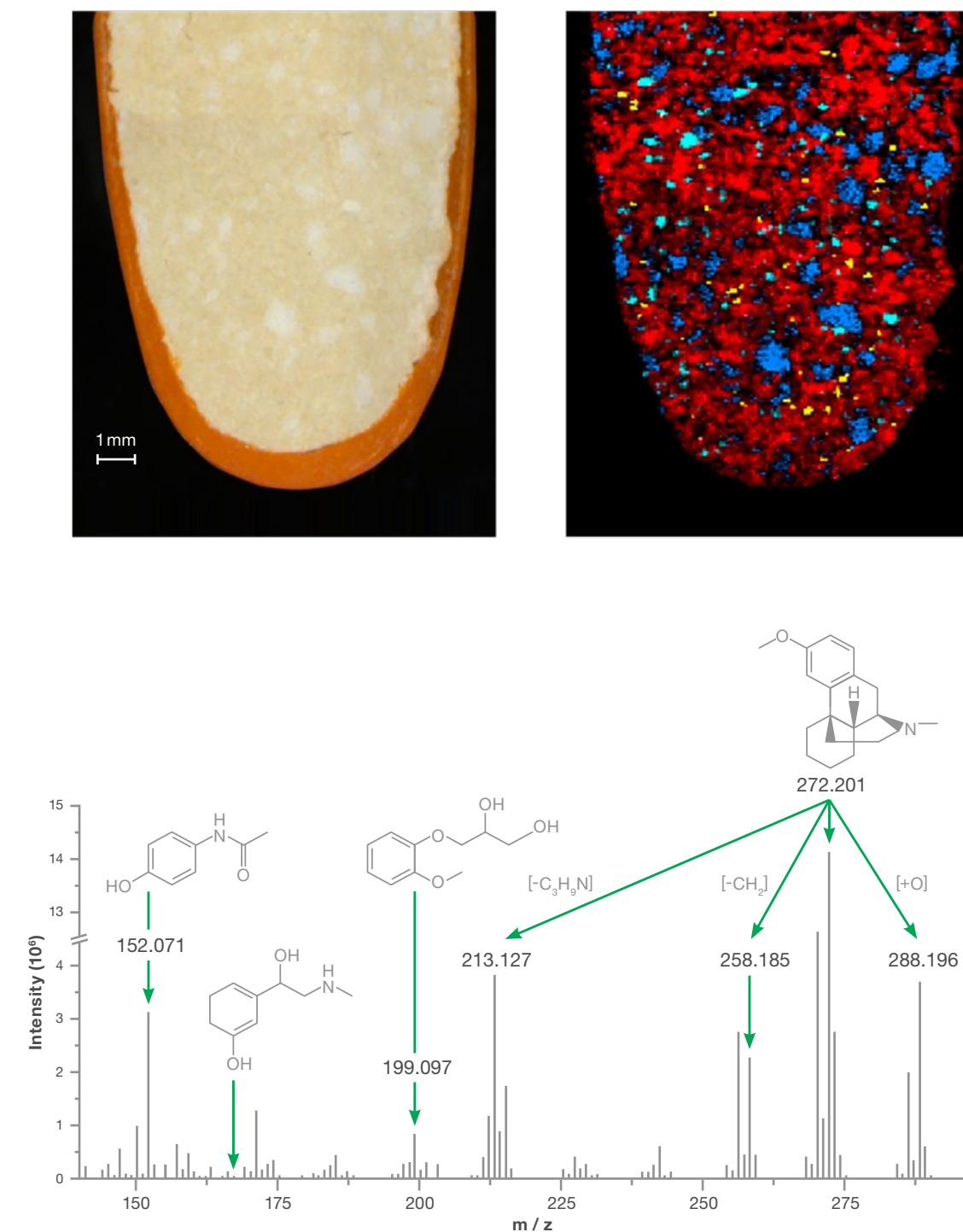
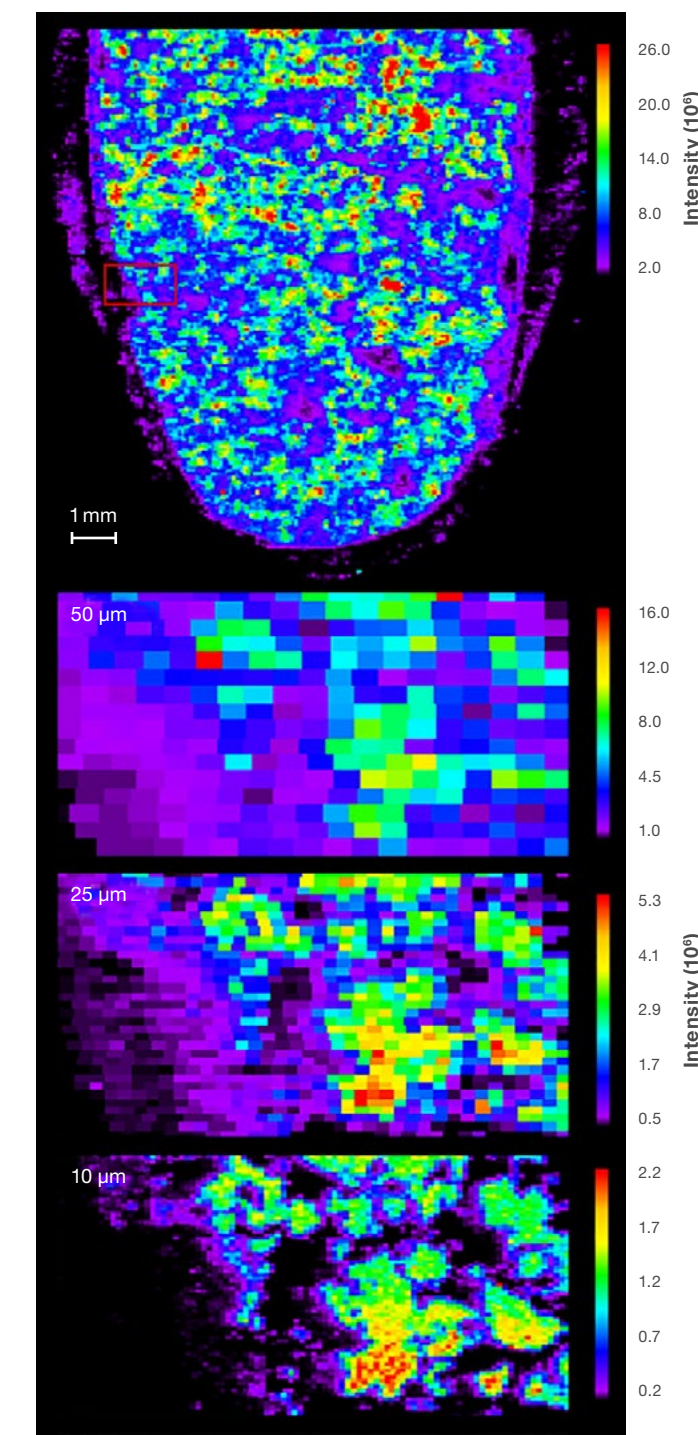


Imaging MS analysis

High-Resolution laser ablation imaging of different surfaces



The combination of fast washout UV-laser ablation with the principle of the flow-through SICRIT® Ion Source allowed for highly efficient soft ionization as well as high spatial resolution down to 10 μm .



“ The SICRIT® source can be hyphenated to any commercial laser ablation system and nearly any API mass spectrometer that is commercially available. This makes this technique easy to adapt to individual needs regarding the sample type and analytical question. ”

Funke, S.K.I. et al., Anal. Chim. Acta 2021, 1177, 338770

ABOUT US

Plasmion's vision is to simplify mass spectrometer based analysis to make it more efficient and accessible for everybody.

Plasmion not only provides innovative solutions that simplify and improve classical MS-based analysis in Labs. It also pushes beyond existing borders by leveraging mass spectrometry as one of the most powerful chemical analysis techniques to enable real-time, Lab-grade analysis even in challenging industrial environments.

Want more information?

Visit us at www.plasmion.com or follow us on [LinkedIn](#)

in



Plasmion
simple smart sensitive

